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City and County of San Francisco
Department of City Planning

Environmental Impact Report

THE DOWNTOWN PLAN

Volume 1: Draft EIR Text

EE81.3

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I. SUMMARY

In August 1983, the Department of City Planning issued its growth management plan for downtown San Francisco, the Downtown Plan. This document (Draft EIR Volume I) and its companion appendix document (Draft EIR Volume II) comprise the draft environmental impact report for the Downtown Plan (Downtown Plan EIR). The draft EIR has been prepared in compliance with the California Environmental Quality Act (CEQA) and applicable state and local guidelines for its implementation. The final EIR for the Downtown Plan will consist of the two volumes of the draft EIR and a third document that will include the public comments on the draft EIR and responses to the significant environmental points raised in public comments on the draft EIR.

This EIR summary describes briefly the Downtown Plan and its objectives, the major environmental impacts of the Downtown Plan, the principal measures that have been identified to mitigate the environmental impacts of the Plan, and the major planning alternatives to the Downtown Plan.

The areas of public controversy that are subject to environmental evaluation under CEQA correspond to the environmental topics lettered A. through K. in the EIR. The major issues to be resolved, including the choice among alternatives, are identified in the summary discussions below. The proposed actions are the adoption and implementation of the Downtown Plan.

DESCRIPTION OF DOWNTOWN PLAN

The Downtown Plan is a proposed set of growth management and land use controls, and related regulatory measures, prepared by the Department of City Planning (DCP) for the Downtown Commercial (C-3) use districts of San Francisco. The Plan is presented in a 145-page document, The Downtown Plan Proposal for Citizen Review, which was published by the Department in August, 1983.

The objectives of the Downtown Plan may be grouped into six topical areas which correspond to the six chapters of the Plan (Space for Commerce, Space for Housing, Open Space, Preserving the Past, Urban Form and Moving About). Most objectives of the Plan are contained in existing functional elements of the citywide Master Plan such as, the Commerce and Industry Element; Residence Element; Urban Design Element; and Transportation Element. The Downtown Plan objectives are summarized by chapter as follows:

Space for Commerce. Maintain and improve San Francisco's position (1) as a prime location for financial, administrative, corporate and professional activity and (2) as a tourist and visitor center. Improve the downtown as (1) the region's prime location for specialized retail trade, (2) with adequate space to meet demand for future office, retail, hotel and related uses, while (3) retaining a diverse base of support commercial activity in and near downtown.

Space for Housing. Expand the supply of housing in and adjacent to downtown, and protect such residential uses from encroachment by commercial uses.

Open Space. Provide quality open space in sufficient quantity and variety to meet the needs of downtown workers, residents, and visitors; with an open space system accessible to all. Consciously treat open space as a counterpoint to the built environment.

Preserving the Past. Conserve resources that provide continuity with San Francisco's past.

Urban Form. Create an urban form for downtown that enhances San Francisco's stature as one of the world's most visually attractive cities, and a building form that is visually interesting and harmonious with surrounding buildings. Create and maintain a comfortable pedestrian environment and an attractive, interesting urban streetscape.

Moving About. Develop transit as the primary method of travel to and from downtown; and ensure that the number of auto trips to and from downtown will not be detrimental to the growth or amenity of downtown. Provide for safe and convenient bicycle use and improve facilities for freight deliveries and business services. Provide those transportation services needed to maintain the economic vitality of the downtown business shopping districts. Improve the downtown pedestrian circulation system to provide for efficient, comfortable and safe movement.

Implementing actions include features related to floor area ratios (FAR), height and bulk limits, use districts, housing bonuses, restrictions, allowances and incentives related to architectural preservation, and additional provisions concerning recreation and open space, art work based on one percent of construction costs, streetscape urban design provisions, and transportation and circulation measures.

Basic floor area ratios would be 6:1 in the C-3-R, C-3-S and C-3-0 (SD) (or Special Development) use districts, 8:1 in the C-3-G use district, and 10:1 in the C-3-0 use district. Certain ground-story uses are excluded from this computation, including retail. The maximum floor area ratio would be dependent upon the height and bulk districts, using transferable development rights from other properties. A C-3-YBC would also be created, based upon the YBC Redevelopment Plan. Maximum height limits would be 180 feet in the C-3-S district, 320 feet in the C-3-G, 375 feet in the C-3-R, 450 feet in the C-3-0 (SD), and 550 feet in C-3-0. Bulk limits would include a provision which divides a building into four parts, the base, the lower tower, the upper tower and the upper tower extension, to provide greater sculpturing of buildings. There would be sun access criteria for open space areas and certain lunchtime malls and sidewalks. Housing in excess of the basic FAR would be permitted as a conditional use in the C-3-G and C-3-S use districts.

Transfer of Development Rights (TDR) from architectural resources to new development projects would be permitted, as long as both sites were within the same C-3 use district, or the development site were within the C-3-0 (SD) use district. Demolition of significant buildings would be generally prohibited, and contributory buildings within any of five Conservation Districts, if demolished, would be required to be replaced by buildings which maintain the character of the District.

Usable indoor and outdoor open space would be required for public use in any new development. The ratio of such open space areas to new construction square footage would be 1:50, except in C-3-R use districts where it would be 1:100. The open space could be on the same site, on a designated open space site, or on other nearby public or private property.

Streetscape policies would provide for buildings to be built at their street frontage lines, with uniform height streetwalls (having setbacks above), while maintaining projecting cornice and belt course patterns in buildings. Ground floor space would be devoted to retail and service uses. Clear and untinted glass would be used at lower levels, and visually interesting details and ornamentation would be provided.

Transportation-related provisions of the Plan involve a Muni Metro turnaround at the Embarcadero, a Muni Metro extension to the SP/Caltrain Terminal, examining alternatives for Muni Metro service along Geary Boulevard and Third Street, and implementing the Muni "E" and "F" streetcar lines. The Plan calls for moderating curbside boarding of Golden Gate Transit and SamTrans vehicles, restricting new long-term parking facilities to the periphery of downtown, and requiring more transportation brokers in new development. Other measures relate to downtown traffic circulation, downtown transit lanes, off-street freight loading and service vehicle space requirements, and tour bus loading requirements. Clear zone legislation (restricting newspaper and other stands at intersections) is also recommended. Various other suggestions outside the scope of the city to implement unilaterally were also suggested. (Page I.5 follows page I.K.1)

ENVIRONMENTAL IMPACTS OF THE DOWNTOWN PLAN

A. LOCAL AND REGIONAL PLANS AND POLICIES

San Francisco Master Plan

The Downtown Plan contains objectives, policies and implementing actions for downtown San Francisco, and is proposed to become a part of the San Francisco Master Plan. As such, objectives and policies of the proposed Downtown Plan and the Master Plan are related, although the objectives, policies and implementing actions of the Downtown Plan are specific to the downtown. General objectives and policies of the Master Plan, and elements not contained within the Downtown Plan, further define planning in San Francisco and the region.

The elements of the Master Plan are identified as Commerce and Industry, Transportation, Residence (Housing), Urban Design, Recreation and Open Space, Environmental Protection, and Community Safety. Special area plans have also been adopted.

Each element of the Master Plan contains statements of goals, objectives, and policies which represent the current official, broad and general recommendations of the City Planning Commission for the development of the City in accordance with present and future needs. In this EIR, those aspects of the Master Plan which pertain specifically to the Downtown Study Area, or relate directly to aspects of the Downtown Plan, are identified and described.

Regional Plans

A variety of plans have been prepared by regional agencies which, though broader in scale, are pertinent to Downtown San Francisco. The San Francisco Bay Conservation and Development Commission is responsible for the San Francisco Bay Plan as amended. The plans of the regional transit providers are covered in the Transportation and Circulation Section of this report. The Downtown Plan as a part of the San Francisco Master Plan would comply with the Transportation Plan prepared by MTC, the Air Quality Plan prepared by the BAAQMD, MTC and ABAG and most other portions of the Regional Plan 1980 prepared by ABAG.

B. LAND USE AND REAL ESTATE DEVELOPMENT

The land use and real estate development forecasts to the year 2000 for the Downtown Plan are presented in Table I.B.1. The conclusions regarding rates of development, development patterns, and land use changes are summarized below:

- The C-3 District development forecasts are supported by strong underlying potentials for economic growth in downtown San Francisco, most of which are independent of City land use and zoning policies. The forecasts and impacts summarized here reflect both underlying growth potentials and the effects of the Plan on real estate market conditions.

- The Plan policies to redirect the location of major office development and to preserve the scale, character, and historic resources of portions of the C-3 District would affect the size of new buildings, the availability of sites for development, and the feasibility of new development. In combination, the Plan's FAR, height/bulk, sunlight access, and preservation policies result in fewer development opportunities in the most preferred office locations and also reduce the development potential on many of the sites that would be prime candidates for development. At the same time, development opportunities to the south of Market Street, primarily in Subareas 1 and 2, are enhanced by the relatively high height limits proposed in the Plan for these areas.

  Other Plan policies directly affect the costs of development. These include building design, form, and appearance provisions and requirements for public art and open space. Higher costs of development have implications for project feasibility. The timing and success of the Plan's strategy to redirect downtown growth depend on feasibility considerations such as development costs and differences in obtainable rents among various locations.

- The forecasts of development by use and subarea represent space that would be built and occupied during the forecast period. The forecasts of future land use and real estate development describe the likely future outcome of both the potentials for supplying space under the Downtown Plan and the demand for C-3 District space to accommodate employment growth. The real estate development forecasts are therefore consistent with the employment forecasts summarized in the next section. These forecasts describe two aspects of the same scenario for future growth.

TABLE I.B.1: SUMMARY OF C-3 DISTRICT SPACE BY USE AND SUBAREA FOR THE DOWNTOWN PLAN

	1984	1990		2000		
Use	GSF	GSF	% Change from 1984	GSF	% Change from 1990	% Change from 1984
Office	62,074	70,492	14	78,889	12	27
Retail	8,220	8,949	9	9,632	8	17
Transient Hotel	9,722	12,535	29	14,120	13	45
Residential Hotel	2,848	2,835	-1	2,835	--	-1
Housing	4,178	5,273	26	5,843	11	40
Cultural/Institutional/ Educational/Other	6,120	5,998	-2	5,489	-8	-10
Industrial/Warehouse/ Automotive	4,128	3,285	-20	2,388	-27	-42
Parking	6,258	6,423	3	6,047	-6	-3
TOTAL	103,548	115,790	12	125,243	8	21
Subarea						
1	49,222	55,496	13	59,694	8	21
2	6,385	7,275	14	9,766	34	53
3	7,749	8,271	7	8,756	6	13
4	6,009	6,009	--	6,324	5	5
5	17,816	19,640	10	20,868	6	17
6	12,486	15,007	20	15,693	5	26
7	3,881	4,092	5	4,142	1	7
TOTAL	103,548	115,790	12	125,243	8	21

NOTE: All numbers are rounded to nearest 1000 GSF.

SOURCE: Recht Hausrath & Associates

- Office buildings are the dominant land use in the C-3 District. The majority of new development projected to occur between 1984 and 2000 is office space.

- The forecast of C-3 District employment growth (representing demand for space) indicates that all of the office space in projects under construction, already approved, and planned for Yerba Buena Center, would not be absorbed until the late 1980's.

- From 1984 to 1990, about 15.7 million sq. ft. of space would be built in the C-3 District. The net increase in space for all uses (accounting for new construction, demolition and conversion) would be 12.2 million sq. ft., an increase of 12 percent over the 1984 total. The net increase in office space would be 14 percent. During this period, new office development would occur at an annual average rate of about 1.6 million sq. ft. per year. This is less than the annual average rate of new office construction 1981 to 1984 (2.5 million sq. ft. per year), but similar to the historic rate from 1965 to 1979 (1.7 million sq. ft. per year).

- Because much of the actual land use change forecast for the 1984 to 1990 period will occur because of decisions made prior to approval of the Downtown Plan, only towards 1990, and beyond, will the consequences of decisions made after 1984 according to the City's revised downtown policies be evidenced in land use changes in the downtown area. Thus, the forecasts for the 1990 to 2000 period provide a better indication of the land use implications of the Plan.

- Between 1990 and 2000, the rate of new development in the C-3 District would slow, resulting primarily from the Plan's management of C-3 District growth and the timing of real estate market adjustments to the Plan's strategy to redirect growth from the north of Market portion of the C-3 District to locations south of Market Street east of YBC within the District.

- From 1990 to 2000, about 11.0 million sq. ft. of space would be built in the C-3 District. The net increase in total C-3 District space (accounting for new construction, demolition, and conversion) would be about 9.5 million sq. ft. over this 10-year period, an eight percent increase. Over the entire 1984-2000 period, there would be a net increase in total C-3 District space of about 21.7 million sq. ft., a 21 percent increase.

- New office development would continue to dominate changes in C-3 District land use between 1990 and 2000. Almost 90 percent of the forecast increase in space would be office space. Office space would increase 12 percent in the C-3 District during this 10-year period. New office building construction in the C-3 District would occur at an average annual rate of about 840,000 sq. ft. per year.

- If annual limits were imposed on the amount of new office development allowed citywide, this would affect the rate of new development in the C-3 District under the Downtown Plan. The degree of effect would depend on the limit chosen and the criteria for allocating permits. A limit of 1.5 million sq. ft. per year would not have much effect on the development forecast under the Plan. With a limit of 0.5 million sq. ft. per year, the majority of new office development citywide would not be allowed. If the criteria for allocating permits favored C-3 District locations, however, the effect on C-3 District development would not be as great. Criteria which added to development costs would also result in relatively more of the allowable development occurring in the higher rent office locations, where additional costs could be most readily passed through in higher rents.

- Overall, rents for C-3 District office space would increase (from current levels) under the Downtown Plan. Given higher rents, it is expected that tenants would use existing space more intensively, thereby reducing the demand for additional office space. In addition, pressures for conversions, remodeling and additions to existing buildings would increase.

- Transient hotel development would also occur at a rapid pace in the C-3 District. There would be a 13 percent increase in hotel space between 1990 and 2000 and an increase of 45 percent from 1984 to 2000.

- Retail development in the C-3 District would result in an eight percent increase in the amount of retail space between 1990 and 2000 and an increase of 17 percent from 1984 to 2000. Retail sales are forecast to increase more than retail space because of increased sales per square foot for both existing and new retail space. Sales are forecast to increase by about 21 percent (in real terms) between 1990 and 2000, and by about 41 percent between 1984 and 2000.

- Between 1984 and 1990, about 1,380 housing units would be added in the C-3 District. About three-quarters would be in YBC. This represents a large increase of housing in the C-3 District, about a 26 percent increase in residential space.

- There would be some increase in C-3 District housing under the Downtown Plan. About 600 units would be added between 1990 and 2000, most in Subareas 3, 4 and 5. This estimate does not include units that would be produced under the City's Office-Housing Production Program (OHPP). Under the Downtown Plan, the OHPP could result in more housing in the C-3 District.

- The amount of space devoted to cultural/institutional/educational/other, industrial/warehouse/automotive, and parking uses is projected to decline in the C-3 District as a consequence of either demolition (for new development) or conversion to office use.

- The net result of all of these changes would be overall increases in the amount of building space in every subarea of the C-3 District between 1984 and 2000. The greatest absolute increase in square feet of space would be in Subarea 1, while the greatest percentage increase (53 percent) would be in Subarea 2. Between 1990 and 2000, compared to the earlier period, the percentage change in space would be substantially less for Subareas 1 and 6 and greater in Subarea 2, reflecting the Plan strategy to redirect C-3 District development away from the traditional financial district and Union Square, to the Special Development District (Subarea 2).

- The general pattern of C-3 District development and land use change evident in the 1990 to 2000 period would continue to apply beyond the year 2000 under the Downtown Plan. Over the longer term, the effects of the Plan would become more obvious in terms of land use and the downtown development pattern. The real estate market would have adapted to the redirection of the path of growth and most major development would be occurring in locations south of Market Street.

- The Downtown Plan would indirectly affect development and land use outside the C-3 District. The potential for shifts in activity primarily concerns office space and the uses it replaces, because new office construction in the C-3 District would be the type of development most affected by the policies of the Plan. The areas peripheral to the C-3 District, particularly to the south, would be the prime areas for expansion of downtown office activities.

  Generally, the office activities that would shift to areas south of the existing C-3 District would include those seeking large amounts of relatively low-cost space or lower-cost sites for the construction of their own facilities, as well as smaller-space-users seeking lower-rent space usually in existing buildings.

  To some extent, this shifting pattern is already underway and would continue without the Downtown Plan. Depending on zoning policies in these other areas, the Plan policies could accelerate the timing of the shift and could increase the overall amount of activity involved.

- If policies similar to the City's Office-Housing Production Program were applied to new office development citywide, in conjunction with the implementation of the Downtown Plan, then the spillover of office development to areas outside the C-3

District would contribute to additional citywide housing production. The application of this additional development cost, however, would probably result in less new office development outside the C-3 District than would otherwise occur under the Plan.

- The land use policies and zoning controls adopted for South of Market areas including those south of the C-3 District will determine the nature and extent of the impacts of the Plan outside the C-3 District. For example, rezoning the South of Market areas west of Third Street to protect existing land uses would reduce, to some extent, the forecast demolition and conversion of industrial/warehouse and automotive space in this portion of the C-3 District. Such controls would also limit the potential area for expansion of downtown office activities outside of the C-3 District, however. Both effects could increase the pressure for conversions and new development in areas that are not similarly protected.

- Although major new office development would shift in a southerly direction under the Plan, there could be some increase in office demand for space in other areas adjacent to the C-3 District. This would be primarily evidenced in pressures for increased rents, conversions, and upgrading. Specific policies for areas such as Chinatown, North Beach and the Northern Waterfront will affect the outcome.

- The Downtown Plan would not have a large effect on the development pattern for the Bay Area region. If anything, the Plan might contribute to somewhat more decentralized development.

- Many of the policies of the Plan would combine with real estate market forces to provide incentives for the use of the transferable development rights (TDRs) created by the designation of significant (retention required) and contributory (retention encouraged) buildings.

- Comparing overall TDR supply and demand, it appears that the supply could be absorbed by demand over the next 25 to 35 years. Demand is unlikely to be sufficient to create strong incentives for retaining contributory buildings, at least for some time into the future. Thus, some of these buildings could be demolished. The large size of many of these buildings relative to what the Plan would allow to be built new on their sites may be the more effective near-term means of preserving these structures.

- The supply of TDRs in Subarea 1 would be large relative to demand in that subarea and the prices offered for TDRs by developers in Subarea 2 (Special Development District) would be less than Subarea 1 property owners would be willing to accept. TDRs from the other subareas would be transferred to the Special Development District before Subarea 1 TDRs would be sold there.

- There are adjustments which could be useful in fine-tuning the operation of the proposed TDR system. These include measures to increase the demand for TDRs, such as increasing height limits in certain areas or allowing transfer to sites outside the C-3 District. Changing the definitions used in Subareas 1 and 2 to determine the amount of TDRs available from a preservation site or that could be used on a development site could help to balance TDR supply and demand in Subarea 1. This involves how ground floor retail space is treated for both existing and new development. Modifying polices regarding transfer of TDRs to the Special Development District (Subarea 2) could be another means of fine-tuning the TDR system. The need for any of these adjustments could be determined after monitoring the actual operation of the system over a reasonable length of time.

- The TDRs used to finance open space would not compete with the TDRs from rated buildings for the potential TDR demand from developers of new projects. The open space TDRs are relatively small compared to the total potential demand for TDRs.

The real estate impacts of the Downtown Plan can be summarized from the perspective of C-3 District property owners. The changes proposed in the Plan would tend to reduce the potential value of new development on a given site, compared to what it otherwise would have been at current rents. Eventually rents would increase, thus increasing the value of a development site or of existing building space. Whether the increase in value from higher rents compensates for the decrease in value because of reduced development potential would depend on the characteristics of individual sites and buildings.

- Land values would be diminished for what had been prime development sites (mostly in Subareas 1 and 6).

- Land values in more outlying subareas (Subarea 2, parts of Subareas 3, 4, and 5) would increase faster than they otherwise might have.

- The values of existing buildings would increase at a faster pace than otherwise expected. Those in especially favorable positions would be the owners of recent major development projects and the owners of relatively large older buildings that are in good condition.

- The owners of currently underutilized space in the outlying parts of the C-3 District (warehouse, industrial, and vacant space) would be able to generate higher values for their property by investing in conversion to office use.

- Over time, the owners of significant buildings would be compensated for the required retention of their buildings through the sale of TDRs. Some of the owners of significant buildings in the outlying subareas (3,4, and 5) who have TDRs to sell would probably be better off in the short term because they could sell their development rights in the Special Development District, an area where demand for space (and thus the value of new development) would be higher than in the location of the significant building site. For some of the owners of small, significant buildings in prime development locations (such as Subarea 1) the sale of TDRs could occur further into the future than would the development of these properties (if they had not been designated significant buildings). This is because of the large supply of TDRs relative to the demand from new development in the near term.

C. BUSINESS AND EMPLOYMENT

The employment forecasts to the year 2000 for the Downtown Plan are presented in Table I.C.1. The conclusions regarding employment growth and the effects of the Plan on the various C-3 District business activities are summarized below:

- The potential for continued C-3 District economic growth is strong. This potential is influenced by many factors such as expanding regional, national and international markets for which San Francisco is already well-suited as a headquarters, financial, and business service center; growth in Pacific Basin trade and business relationships; increased tourism and convention activity; and downtown San Francisco's established role as a primary retail location in the region. It is also influenced by national economic trends such as those supporting an expanding service sector and a declining manufacturing sector. These and other factors will shape future C-3 District economic growth. The Downtown Plan is only one of these factors. The strong underlying growth potentials are largely independent of the Downtown Plan and are the more important determinants of growth potential in San Francisco.

- The Downtown Plan would have some effect on the rate of C-3 District growth and on the types of activities that expand in the C-3 District. The forecasts and impacts described here reflect both underlying growth potentials and the effects of the Plan on real estate market conditions and, thus, on the employment growth that would be accommodated in the C-3 District by the year 2000.

- The Downtown Plan would result in real increases in the cost of doing business in the C-3 District over time. This would primarily be due to increases in the cost of obtaining space in the C-3 District. Demand for space of all types would be strong, and the Plan would specifically redirect the scale and location of new development, compared to recent patterns. As a result of less expansion in the more preferred areas, space costs (rents) are expected to increase.

- The Plan would have different effects on different business activities. Those most affected would be the office activities that are most sensitive to the cost of space and those which place the least value on a central C-3 District location.

TABLE I.C.1: SUMMARY OF C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY FOR THE DOWNTOWN PLAN

Business Activity	1984	1990		2000		
	Total Employment	Total Employment	% Change From 1984	Total Employment	% Change From 1990	% Change From 1984
Management/Technical Office	185,900	216,200	16	251,600	16	35
Trade/Customer Service Office	37,400	43,200	15	51,900	20	39
Retail Trade	23,200	25,400	9	27,800	10	20
Hotel	13,800	16,300	18	19,900	22	44
Cultural/Institutional/ Educational	8,300	9,300	12	9,300	--	12
Industrial/Warehouse/ Automotive/Parking	6,500	5,600	-13	4,400	-22	-32
Building Maintenance	5,800	6,500	13	7,200	11	24
TOTAL Permanent Employment	280,900	322,500	15	372,000	15	32

	1984-1990	1990-2000	1984-2000
Permanent Employment Growth	41,600	49,600	91,200
Annual Growth Rate	2.3%	1.4%	1.8%

	1984-1990 Average Employment/Year	1990-2000 Average Employment/Year
Construction Employment	5,400	4,300

NOTE: All numbers are rounded to nearest 100 jobs.

SOURCE: Recht Hausrath & Associates

- Office firms that place a high value on a central C-3 District location and that are willing to pay the higher rents would have more location options than would either small rent-sensitive office activities or large-space-using functions. Many of these latter activities would choose alternate locations (in or out of the City) rather than pay the higher rents. While this trend is already underway, future competition for C-3 District office space would intensify under the Downtown Plan.

- Although the size and location of new retail and hotel activities would be regulated by the Plan, the options for these activities would generally be greater than for some office activities. Moreover, supported by strong demand, these businesses would be expected to increase the level of activity in existing space.

- The options for industrial, institutional and other less downtown-oriented activities would be limited in the C-3 District because these types of businesses are unable to pay the relatively high space costs generated by strong demand in the high growth sectors. The higher rents under the Plan would add to an already very competitive situation.

- Considering all of these factors, total employment in the C-3 District under the Downtown Plan is expected to increase by about 91,200 jobs between 1984 and 2000. Growth would be fastest during the 1984-1990 period (an annual rate of 2.3 percent) and would slow between 1990 and 2000 (to an annual rate of 1.4 percent).

- The forecast of C-3 District employment growth (representing the demand for space) indicates that, due to the large amount of development under construction, already approved, and planned for Yerba Buena Center, the Downtown Plan would not begin to have measurable effects on employment in the C-3 District until about 1990. As a result, the effects of the Plan are more evident in the changes in employment between 1990 and 2000, than in growth from 1984 to 2000.

- Employment would grow in all business activities, except industrial/warehouse/automotive and parking activities and cultural/institutional/educational activities. Most (about 90 percent) of C-3 District employment growth between 1990 and 2000 would be in office activities. Hotel employment would also experience strong growth over this period, increasing by 22 percent. While retail employment growth is moderate (a 10 percent change between 1990 and 2000), retail activity, as measured by sales growth, is forecast to increase at a faster pace. A 21 percent real increase in retail sales in the C-3 District is forecast for the 1990 to 2000 period.

- Construction employment is directly related to the amount of building activity. On average, there would be about 5,400 construction jobs per year in the C-3 District between 1984 and 1990 and about 4,300 construction jobs per year between 1990 and 2000.

- The Downtown Plan would have less effect on employment growth than on the development of space. The primary reason stems from the Plan's effects on reducing the availability and increasing the cost of space in desirable C-3 District locations. As a result, office business activities are expected to use space more intensively. As these adaptations occur, some employment growth will occur in existing space thereby reducing the demand for new space.

- If annual limits were imposed on the amount of new office development citywide, this would result in less employment growth under the Downtown Plan. The office activities most affected would be those most sensitive to the costs of space. The criteria for allocating building permits under an annual limit system would influence the types of businesses and employment affected.

- Employment growth would continue in the C-3 District beyond the year 2000; the effects of the Downtown Plan, in terms of the characteristics of the businesses located downtown, would become more evident. Employment growth rates could become slower, if the more intensive use of existing space did not continue in the same degree and annual rates of office construction did not increase. However higher annual office construction could occur after 2000 as the real estate market conditions become increasingly favorable in the locations to which the Plan seeks to redirect growth. In this case, rates of employment growth similar to the earlier period could be maintained.

- The Downtown Plan (as well as City policies in other areas) would affect employment growth throughout the City. The C-3 District would continue to attract a large share of citywide employment growth. The Downtown Plan would encourage change in areas south of the C-3 District, as firms desiring lower-cost, centrally-located space seek locations in this area rather than in the C-3 District where space costs would be higher.

  To the extent downtown activities move south of the C-3 District, the existing businesses may find it increasingly difficult to operate there. While a long-term trend of decline for many of these activities has been underway for some time, the shifts of activity because of Downtown Plan policies could intensify transitional pressures.

The land use policies and zoning controls adopted for South of Market areas including those south of the C-3 District will determine the nature and extent of these potential impacts of the Downtown Plan. For example, rezoning the South of Market areas west of Third Street to protect existing land uses would reduce, to some extent, the forecast decline of industrial/warehouse and automotive activities. On the other hand, policies to encourage the development of lower-rent space for office activities, that would not be able to afford space in the C-3 District under the Plan, may conflict with policies to protect existing businesses. Given the large land supply in the area south of Folsom Street, it is possible that zoning boundaries could be drawn to accommodate both policy objectives.

- A large amount of employment growth is expected in the Bay Area region between 1984 and 2000. San Francisco is likely to represent a constant or declining share of total regional employment, over time. The policies of the Downtown Plan would not have a measurable effect on employment growth in the region. Changes in San Francisco employment are more likely to be evident in the distribution of employment and business activities in the region.

Another means of summarizing the employment effects of the Plan is to take the perspective of employees that could potentially be seeking employment opportunities in the C-3 District. The following points highlight this level of impacts.

- Employment growth in the C-3 District implies increased job opportunities there. From the perspective of labor force members already employed or that might seek jobs with C-3 District businesses, the opportunities would vary depending on the worker's education, experience and training.

- Opportunities for office workers would increase the most, over time. In relative terms, the options for executives and mid-level office workers would be greater than for technical or entry level clerical workers.

- Entry level job opportunities in the retail and service sectors would be relatively large. Sales and management professionals in these sectors would also enjoy expanded job opportunities.

- With the exception of construction workers, job opportunities in the C-3 District would decline over time for those seeking non-office crafts, operatives or laborer positions.

- Job training programs could help to improve the match between the City labor pool and the job opportunities available in the C-3 District under the Downtown Plan.

D. RESIDENCE PATTERNS AND HOUSING

The residence pattern forecasts for C-3 District workers to the year 2000 for the Downtown Plan are presented in Table I.D.1. The conclusions regarding changes in residence patterns, housing production in San Francisco, and the relationship between employment growth and the City's housing market are summarized below:

- A change in workplace can be related to a change in residence, although a cause-and-effect relationship is difficult to establish. Moreover, a change in residence does not have to occur at the same time as a change in workplace. Demographic characteristics, lifestyle preferences, housing market factors and the transportation system all influence an individual's choice of where to live and work.

- The changing residence patterns summarized here result from a combination of changes in the individuals who are employed in San Francisco and of changes in the place of residence of existing and newly employed workers. Only some of these changes occur because of C-3 District job growth. Other important factors include the growth and distribution of labor force, housing, and employment opportunities throughout the region.

- The Downtown Plan's effects on residence patterns occur because of both the characteristics of C-3 District employment growth and the housing supply in San Francisco under the Plan. The increase in C-3 District employees living in San Francisco would be 15,800, or nine percent, from 1990 to 2000 and 30,300, or 19 percent, over the entire 1984 to 2000 period.

- The "most likely" scenario for future, additional housing in San Francisco between 1984 and 2000 is about 1,000 units per year (after accounting for demolition and conversions). The total addition of housing units in the City is forecast to be about 16,200 between 1984 and 2000. The housing policies of the Plan (allowing additional space above the base FAR in the C-3-G and C-3-S use districts if that space is devoted to housing) would provide an incentive for housing production in the C-3 District. A small amount of the housing included in these forecast totals can be attributed to this Plan policy.

- The number of C-3 District workers residing in all counties of the region would increase over time under the Plan.

TABLE I.D.1: SUMMARY OF RESIDENCE PATTERNS OF C-3 DISTRICT WORKERS UNDER THE DOWNTOWN PLAN

	1984	1990		2000		
	Total	Total	% Change From 1984	Total	% Change From 1990	% Change From 1984
Number of Workers by Place of Residence						
San Francisco	158,700	173,200	9	189,000	9	19
East Bay	73,200	90,200	23	110,300	22	51
South Bay	34,600	40,600	17	47,500	17	37
North Bay	19,500	23,700	22	29,300	24	50
Other	100	200		300		
Total	286,100	327,900		376,400		
Percentage Distribution of Workers by Place of Residence						
San Francisco	55.5%	52.8%		50.2%		
East Bay	25.6	27.5		29.3		
South Bay	12.1	12.4		12.7		
North Bay	6.8	7.3		7.8		
Other	few	few		few		
Total	100.0%	100.0%		100.0%		

Summary for San Francisco	1984	1990	2000
C-3 District Jobs	286,100	327,900	376,400
-Number of C-3 District Jobs Held by Residents	158,700	173,200	189,000
-Percent Held by Residents	55.5%	52.8%	50.2%
Employed Residents	352,700	371,400	398,000
-Number Working in C-3 District	158,700	173,200	189,000
-Percent Working in C-3 District	45.0%	46.6%	47.5%

NOTE: East Bay includes Alameda, Contra Costa, Solano and Napa Counties; South Bay includes San Mateo and Santa Clara Counties; North Bay includes Marin and Sonoma Counties. Numbers are rounded to nearest 100 workers. Number of workers includes permanent employment and annual average construction labor.

SOURCE: Recht Hausrath & Associates

- Throughout the 1980's and 1990's, the largest number of C-3 District workers would live in San Francisco. The next largest number would live in the east bay, followed by the south bay, and then the north bay.

- From 1984 to 2000, the greatest increase is expected for workers residing in the east bay. The next largest increase would occur for workers living in San Francisco, followed by the increase of those living in the south bay and then the north bay.

- In terms of percentage increases, the largest percentage growth of C-3 District employees would occur for those residing in the north bay and the east bay, followed by the south bay, and then San Francisco.

- All of the increase in C-3 District workers forecast to reside in each county throughout the region does not reflect a net addition of population in the region or in each county. The growth of population to provide labor for job growth would be less than the increase in employed persons primarily because labor force participation within the existing population is expected to increase.

- Over time, businesses in the C-3 District will employ a larger number of San Francisco residents. Under the Downtown Plan, 189,000 San Franciscans would be employed in the C-3 District by 2000. This would represent an increase of 30,300 residents working in the C-3 District over the 1984 total, growth of 19 percent.

- Over time, a larger percentage of the City's total workforce would be employed in the C-3 District (47.5 percent of employed City residents in 2000 as compared to 45.0 percent in 1984). There are several reasons for this trend. The propensity to live and work in San Francisco will remain high. A large amount of additional housing is forecast to be developed in San Francisco, a larger net addition than occurred in the past over a comparable time period. As new housing is built, it could be occupied by proportionally more C-3 District workers since they are likely to include many who have the preferences and resources for the types of new units built. Also, a larger share of the new housing is expected to be built in the downtown area or in close proximity to it. In addition, as turnover of the existing stock occurs, some who work in the C-3 District may replace others who did not work there. Furthermore, an increase in the number of ongoing residents who work is also projected and their propensity to work in the C-3 District will be high.

- Over time, the percentage of C-3 District jobs held by San Francisco residents would decline, from 55.5 percent in 1984 to 50.2 percent in 2000. This is due to a combination of two factors. First, future labor force and housing growth in San Francisco will not increase in proportion to C-3 District job growth. Second, labor force and housing growth elsewhere in the Bay Area are expected to increase by larger amounts than in San Francisco. Therefore, it is likely that an increasing proportion of C-3 District jobs will be held by non-San Francisco residents.

- The net increase in San Franciscans working in the C-3 District does not represent corresponding increases in housing, households, or population in San Francisco. A large share of the growth of residents working in the C-3 District will occur because of changes in the labor force participation and place of work of ongoing residents and because of turnover in the occupancy of the existing housing stock.

- San Francisco's housing market situation arises out of a local, regional, and national context. While downtown employment and employment growth play an important role, the housing problems of San Francisco residents are not solely due to downtown growth. Other important factors include changing lifestyles, changing demographic and household characteristics, changing household incomes, other employment growth, the attractiveness of the Bay Area as a place to live, the availability and cost of financing, the attractiveness of real estate as an investment, no-growth policies in some communities and the increasing scarcity of land in others.

- The forecast increases in San Francisco employment and housing indicate that there is likely to be a better "match" between job growth and housing growth in San Francisco in the future than occurred in the past. The principal reason is that housing market factors and local policies and redevelopment programs, primarily, are expected to support a larger addition of housing in the City than occurred in the past two decades.

- Although the "match" between job growth and housing growth is likely to improve, the City's housing market is expected to remain competitive in future years. San Francisco is expected to maintain its desirability as a place of residence, and prices and rents in the City are generally expected to remain relatively higher than those for housing in many other parts of the region.

- Downtown employment and employment growth will continue to be among the factors supporting a competitive housing market. At a minimum, continued C-3 District employment growth would contribute to keeping housing prices and rents at current levels in constant dollars. Depending on the future of other factors (such as interest rates and the availability of mortgage money), the "match" between housing growth and C-3 District employment growth under the Plan could contribute to a future situation where prices and rents are slightly or moderately higher on average than current levels.

- To the extent that housing prices and rents would increase over time, some people may decide not to move into San Francisco, current residents who rent would find it more difficult to buy a home, and some existing residents would move out of the City if they find a more acceptable housing product elsewhere. Others would continue to live in San Francisco and to pay higher prices and rents for City housing.

- There are two basic approaches for the mitigation of housing market impacts. One is to take steps to produce more housing. The other is to reduce the amount of employment growth.

- Producing additional housing in the City would result in less increase in housing prices than otherwise (assuming similar employment). To the extent that additional housing is built in San Francisco, it would be accompanied by an increase in the number downtown workers living in the City.

- The Office-Housing Production Program (OHPP) is a City program that would produce additional housing. If it were implemented in tandem with the Downtown Plan, it is estimated that an additional 1,800 units would be produced between 1990 and 2000 as a result of the requirement for C-3 District office developers, bringing the 16-year (1984-2000) production total to 18,000 units. Application of the OHPP to office development outside the C-3 District would result in a further net addition of about 1,000 to 1,500 units to the City's housing stock.

- Creating additional incentives for office developers to build housing in the C-3 District could also produce additional housing. Such incentives might not be as desirable as the OHPP because they could compete with other elements of the Downtown Plan.

- In concert with the OHPP, the City could take action to increase the feasibility of and locations for housing development throughout the City. The use of tax-exempt mortgage revenue bonds to provide financing at below market rates would stimulate production of units that might not otherwise be built.

- If annual limits on new development were imposed, employment growth would be limited and employment opportunities for both San Francisco residents and non-residents would be less than otherwise (assuming a similar housing stock). This could reduce the increased pressure on the housing market that occurs with employment growth.

E. TRANSPORTATION AND CIRCULATION

Travel Demand

Between 1984 and 1990, increases in employment in the C-3 District would generate an approximate 13% increase in peak-hour and peak-period travel demand from the C-3 District. This travel demand would be spread over all of the transportation modes currently used by C-3 District travellers. Because of increasing levels of congestion on portions of the transportation network, the use of automobiles (especially for commuting purposes) by C-3 District users would be expected to decline by about one percent to two percent from the level of use in 1984; transit use would be expected to increase by about the same amount.

Peak-hour and peak-period travel from non-C-3 District sources (the remainder of San Francisco and the rest of the Bay Area) on the transportation network serving San Francisco would be expected to increase in the 1984-1990 period, although the percentage increase would not be as great as the percentage increase in C-3 District travel demand for the same period. C-3 District travel would comprise varying levels of the overall demand on the various components of the transportation network.

The year 2000 travel from the C-3 District would represent an increase of about 14% over 1990 peak-hour and peak-period travel. The total increase in peak-period and peak-hour travel from the C-3 District in the period 1984 to 2000 would be about 31% (about two percent per year compounded annually). Single-occupant auto use by C-3 District users has been projected to continue to decline as a percentage of the overall modal split by an additional two percent from the level of use in 1990 (a total of about four percent from the 1984 level); transit use would be expected to increase by about the same amount. Peak-hour and peak-period travel from non-C-3 District sources on the transportation network would continue to increase, thus increasing overall travel demand on the transportation network serving San Francisco in the period 1990 to 2000. The levels of the overall demand on the various components of the transportation network comprised by C-3 District travel in the year 2000 would be similar to the 1990 levels.

Public Transportation

On the local and regional transit systems serving San Francisco, the travel from the C-3 District would represent between about 75% and 95% of the ridership on most of the systems. Operating conditions in 1990 on the transit systems is projected to be equivalent to 1981/82 conditions and slightly better than 1984 conditions. Transit service improvements scheduled to occur by 1990 have been assumed to increase the service availability by about 15% to 40% on the various systems serving San Francisco. The service improvements would allow transit operating conditions to remain similar to those experienced in 1981/82 even though the respective systems would be carrying an approximate 20% increase in ridership. The growth in demand from both C-3 District and non-C-3 sources would use essentially all of the service improvements proposed to occur by 1990. The transit systems would not be able to meet their goals of improved operating conditions in terms of passenger comfort, nor would the Goals of the Plan regarding increased transit use be achieved, unless additional service can be provided by 1990.

Peak-hour transit demand on Muni in the year 2000 would increase about 25% over 1984 levels (which would be an increase of about 10% over 1990 levels) in the Northeast, Northwest and Southwest corridors. Muni demand in the Southeast corridor would increase about 40% between 1984 and 2000 (about 20% between 1990 and 2000). Peak-hour demand on the other agencies with the exception of AC Transit would increase between 30% and 70% during the period 1984 to 2000. Peak-period increases in demand would be between 15% and 70% during the 1984 to 2000 period; 1990 to 2000 increases would be between 10% and 40%. Overall peak-period transit travel would be expected to increase about 30% between 1984 and 2000. Peak-hour and peak-period passenger loadings would be worse than in 1990, although most systems would operate in acceptable conditions (Level of Service D or better). Muni service to the Southwest would need to be increased by an additional 14% between the years 1990 and 2000, and BART would require an additional nine percent increase in transbay service over the levels assumed to occur in the year 2000 in order to meet the goals of the respective agencies regarding desirable passenger loadings in the peak period. If transit service were not increased beyond the amounts assumed to occur by the year 2000, transit operations (in terms of passenger comfort) would be essentially equivalent to 1981/82 conditions. Peak-hour and peak-period passengers per seat ratios would be about the same as 1981/81 ratios even though service (in some corridors) would increase as much as 80% between 1981/82 and 2000.

Traffic

Travel from the C-3 District represents approximately half of the travel on the regional freeway and bridge system serving San Francisco. Peak-hour and peak-period increases in traffic on the regional freeway and bridge system by 1990 would cause increases in congestion and a spreading of peak-of-the-peak conditions over greater periods of time during the day. Overall peak-hour increases in traffic volumes would range from about one percent on the Bay Bridge to about four percent on the freeways to the Peninsula. Although, the amount of transit use and ridesharing by C-3 District commuters has been assumed to increase by 1990, there would be excess auto demand of about 800 trips-ends that would be expected to substantially increase congestion on the freeway system, unless absorbed by transit.

Peak-hour operating conditions on the San Francisco street system would be expected to deteriorate by 1990. Areas near freeway ramps which are already experiencing Level of Service E and F operation in the peak hour would be expected to continue to operate in unacceptable conditions and may deteriorate into jammed conditions with increasing frequency. Intersections elsewhere in the downtown would generally operate at Level of Service D.

Travel demand during the peak hour at regional screenlines in the East Bay and Peninsula corridors would be expected to increase about 15% between 1984 and 2000; an increase of about seven percent over 1990 levels. Peak-hour demand in the North Bay corridor would increase by about six percent between 1984 and 2000; an increase of about two percent over 1990. Operating conditions at the regional screenlines would be at or near capacity in Level of Service E. Traffic flow conditions would be expected to be very unstable and may experience temporary flow interruptions throughout the peak-period.
Peak-of-the-peak conditions would be prevalent during the peak hour and may extend into the peak period. There would be excess demand of about 1,300 trip-ends in the East Bay corridor. BART would require service increases of an additional four percent over the increase needed to meet the desired loadings (12% total increase over that assumed to occur). The Peninsula corridor would have excess demand of about 500 trip-ends during the peak period, which could be accommodated on CalTrain. If SamTrans were to absorb all of the excess demand, loadings would increase to the upper limit of acceptable conditions. If BART Westbay were to absorb some of the excess demand, there would be increases in demand on SamTrans routes serving the Daly City station and increased auto

demand (and parking demand) on streets near the Daly City station. The excess demand in the North Bay corridor (about 500 trip-ends) could be accommodated by Golden Gate transit bus service.

Peak-hour conditions would be expected to continue to deteriorate at all of the downtown intersections by the year 2000. Expanded areas of traffic congestion would disrupt surface Muni operations. Service to the Northwest portion of the City would be adversely affected by the Level of Service E conditions at the intersections of Sutter and Stockton Streets and Montgomery and California Streets. Peak-of-the-peak conditions would be expected to occur over longer periods by the year 2000.

Parking

Parking demand from the C-3 District would be expected to increase about 13% between 1984 and 1990, while the parking supply in and near the C-3 District would be expected to increase by about nine percent during the same period. The equivalent daily parking demand in 1990 would exceed the supply of parking space by less than one percent, or about 300 equivalent daily spaces. The deficit could represent as many as 1,000 individual vehicles if the spaces were all used by short-term parkers. The excess equivalent daily parking demand would cause a spread of parking further into areas adjacent to the C-3 District and would increase competition for parking in those areas. The excess demand could, potentially, increase the incidence of parking in adjacent and outlying residential areas of the City. Motorists in 1990 would be expected to experience greater difficulty in locating parking during mid-day periods as individual facilities would be occupied at higher levels and for longer periods of time than in 1984. Short-term parkers (about 25% of the total demand) would be expected to encounter increasing levels of competition for short-term space from long-term parkers.

Parking demand from the C-3 District in the year 2000 under the Downtown Plan would increase by about 28% over 1984 levels, or 13% over 1990 levels. Short-term demand would continue to represent about 25% of the total demand. On the basis of the parking-related policies of the Master Plan (and the Downtown Plan), the number of parking spaces in and near the C-3 District in the year 2000 has been assumed to remain at about 1990 levels. This would result in a parking deficit of about 12%, or 6,000 equivalent daily spaces in the year 2000 if vehicular demand occurs as projected.

However, the analysis for the year 2000 forecasts excess auto demand in the peak hour and the peak period. If the excess demand is accommodated on transit or ridesharing, then the overall equivalent daily parking demand would decrease from the above estimate by about 2,300 spaces leaving a deficit of about 3,700 equivalent daily spaces. The remaining excess demand would be expected to overflow into adjacent and outlying residential and commercial areas. One impact of a spreading of parking demand would be increased competition for on-street parking in these areas, which could increase public sentiment for expansion of the residential permit parking program and more rigorous enforcement of parking regulations. Alternatively, if the Goals of the Downtown Plan are achieved, total equivalent daily parking demand in the year 2000 would increase about six percent over 1984 and three percent over 1990. If the Goals of the Plan were achieved, there would not be a parking deficit.

Pedestrian Circulation

Pedestrian mobility may be expected to decrease in the period 1984 to 1990 as the general level of activity in the C-3 District increases. Noon-time conditions would worsen in areas already congested in 1981 and 1984, such as lower Montgomery Street and the Union Square retail areas. During the p.m. peak, pedestrian travel along commute corridors to transit stations and parking would be expected to operate in more congested conditions.

Between 1990 and 2000, increased development would continue to increase the number of C-3 District users which would lessen pedestrian mobility in the C-3 District, although the overall change would be less than during the period 1984 to 1990. The primary reason for the difference is the Plan's focus on new areas of development (i.e. in Subarea 2 rather than in Subarea 1) where pedestrian flows are lower in the 1981/82 conditions and the sidewalks can, therefore, absorb greater increases in pedestrian travel before becoming congested.

Mitigation

Mitigation measures proposed in the Downtown Plan include service improvements for both rail and non-rail (motor coach, trolley coach and ferry) transit systems.

Construction of the Muni Metro Turnaround, the Muni Metro extension to Fourth and Townsend Streets, and the E and F lines, would effectively add 6,100 seats/per hour to the Muni system. These improvements would allow the system to accommodate 12,000 more passengers in the peak period than it could otherwise accommodate. The additional transit service may allow the Plan's goals to be met if the 3,000 City residents projected to drive in the peak period would shift to transit. Such a shift would correspondingly reduce projected parking demand and traffic impacts. The additional transit capacity would be sufficient to allow Muni operations to the Southwest corridor to achieve desired passenger loadings.

Measures are also proposed that would expand BART service and extend the BART system to North Concord, Warm Springs in Fremont and to the San Francisco Airport on the Peninsula. While it is premature to predict actual system capacity increases attribuitable to BART extensions, it is recognized that these extensions will increase the system's capabilities to provide service. If additional patronage were attracted from persons assumed to drive to the C-3 District, travel conditions in the East Bay and Peninsula corridors would improve. This would correspondingly reduce traffic impacts and parking demand.

Measures are also presented to implement high occupancy vehicle (HOV) facilities to encourage ridesharing. Other measures would develop a series of transit preferential lanes on City streets to facilitate transit operations. Proposals to improve the pedestrian environment are included in the mitigation measures presented in Section V, as are various measures designed to address aspects of parking in and near the C-3 District.

F. COMMUNITY SERVICES

Solid Waste

The City's landfill disposal contract with Mountain View expired in November, 1983. A contract with Alameda County to use the Altamont Hills landfill site began on November 1, 1983 and will extend for five years to November 1, 1988. How the City will dispose of its solid waste after 1988 has not been finally resolved, although the Board of Supervisors has approved (February 1984) use of the B+J Dropbox Landfill site in Solano County for five years (1988-1993). Construction of a Resource Recovery Facility, which is also being pursued, would reduce future needs for landfill space.

The shift in land use in Subareas 2 and 3 away from light industrial and toward office uses would alter the waste stream from these areas by producing more paper, and less metals, wood crating and industrial materials (chemicals, plastics). This could make disposal, recycling, and resource conversion easier, in spite of overall projected annual tonnage increases.

An annual office growth limit of 0.5 million sq. ft. per year would be effective in reducing annual solid waste generation by up to about five percent from the C-3 District. This reduction would not, however, postpone either the need for new landfill sites or new methods of disposal after 1993.

Police

Almost 20% of all reported criminal incidents in the City occur in the C-3 District. Between 1984 and 1990, annual criminal incidents would increase by about 730, or about three percent. About seventy percent of these new incidents would occur in Subareas 5 and 6. Tourist hotel and retail uses in these areas would experience most of this increase.

Between 1990 and 2000, (after implementation of the Downtown Plan), the C-3 District would experience an increase of about 780 annual incidents. This would be an increase of about three percent over this ten-year period, less than the projected eight percent increase in building area in the C-3 District over the same period. About 60% of the new criminal incidents between 1990 and 2000 would be expected to occur in Subareas 5 and 6. The new retail space in Subareas 5 and 6 would experience a disproportionate share of the new criminal incidents. Subareas 3, 4, and 7 would experience little increase in crime. Subareas 1 and 2, although containing about 70% of the growth between 1990 and

2000, would experience only 23% of the increase in C-3 District annual criminal incidents in that period.

Projected increases in criminal incidents would increase demands on Police Department personnel time by no more than one percent between 1984 and 2000. Should the Police Department hire personnel and buy equipment to meet these demands (i.e., maintain existing levels of service), their operating budget would also increase by no more than one percent between 1984 and 2000. No major capital improvements would be necessary.

Annual office development limits would not be effective in reducing crime rates in the C-3 District, primarily because new office space would not be a major target of new crime.

Fire

Between 1984 and 1990 (as well as between 1990 and 2000, after implementation of the Downtown Plan) the annual number of non-fire incidents would increase more rapidly than fire incidents. This would be due to the effectiveness of the San Francisco and State Life Safety Code provisions for new building construction. The increase in non-fire incidents would tend to be almost directly proportional to increases in population. Total annual C-3 District fire and non-fire incidents woud increase by about one percent between 1984 and 1990, and by about one percent between 1990 and 2000.

The firefighting units serving the C-3 District are currently among the busiest in the City. They would all be even busier in the year 2000, but the Fire Department sees no need for new units. Engine Co. 1, that unit likely to receive the greatest demand for new service hours as a result of projected C-3 District development, would operate at about 85% of its "threshold for new service." Service to neighborhoods adjoining the C-3 District would not be affected.

The Department would need two new fire inspectors between 1984 and 2000 to adequately serve the projected new building area. No new equipment or administrative personnel would be required to support these inspectors and no new equipment or staff would be needed to handle projected shifts from fire to non-fire incidents.

Annual office development limits would not be effective in reducing fire incidents, and would have a small effect (less than one percent) in reducing non-fire incidents.

G. ENERGY RESOURCES AND UTILITIES

Development under the Downtown Plan would increase building electricity consumption by about 350 kWh per year, a 15% increase in downtown electricity consumption, and would increase peak electricity demand by about 19% between 1984 and 2000. Natural gas consumption would rise about 10% during this period, and consumption of downtown-related transportation energy would increase by about 11%. Overall downtown-related energy consumption would increase approximately 13% to about 43 trillion Btu/year. The cost to the consumer of energy required for downtown development would increase by about $140 million. Changes in the modal split of travel between the downtown and outlying areas by the year 2000 would reduce average energy consumption per passenger-mile traveled by about 14%, but a 32% increase in total passenger-miles traveled would increase overall transportation energy requirements by about 11% for downtown-related travel.

The energy requirements of future development in the downtown would increase the need for development of natural resources such as geothermal steam, oil, natural gas, and hydroelectric sites. The energy requirements of future development in the downtown would also contribute to heat island effects in the downtown. Mitigation measures described in this report would, if implemented, result in a reduction in the electricity requirements and, to a lesser extent, in the natural gas requirements of future downtown development. This reduction would, in turn, reduce physical energy-related impacts on the downtown such as increased air temperatures and stagnant air. It would also decrease the demand for non-renewable energy resources.

H. ARCHITECTURAL/HISTORIC RESOURCES AND URBAN DESIGN

Architectural Resources

During the period 1984 to 1990, approximately 43 significant and contributary architectural resources would be demolished or substantially altered on sites for which development is under construction, approved, or otherwise forecast to occur. This represents a rate of approximately seven resources per year, which is roughly comparable to the rate at which demolitions have been occuring since about 1975.

During the period 1990 to 2000, an additional 41 architectural resources are forecast to be demolished or substantially altered under the provisions of the Downtown Plan. This would represent a rate of about four per year, fewer than the projected annual trend through 1990.

The principal mitigation measures that would be responsible for the preservation of architectural resources would be proposed prohibitions on demolition of Category I and II buildings, preservation incentives provided by transferable development rights, and other incentives and protections afforded by proposed conservation districts, design review and conditional use procedures.

Streetscape and Pedestrian Amenities

The Plan would require or encourage a variety of design features to enhance pedestrian amenity and streetscape, including the following:

- transition between new buildings and existing smaller buildings;
- large-scale landscaped areas and open space;
- street trees where appropriate;
- retail and commercial facilities at street level;
- architectural detail and embellishment at street level;
- alternative pedestrian routes that would create a variety of spatial experience;
- continuity of cornice and parapet lines;
- detailed facades;
- limitations on blank walls;
- planting and paving in alleyways to create promenades; and,
- mid-block pedestrian short-cuts.

Wind, Sun and Shadow

The Downtown Plan would result in building designs that are less likely to cause adverse pedestrian wind impacts than buildings built in conformance with the existing Planning Code. Reduced heights would lessen the exposure of new building to winds. Regulations relating to building form would result in tapered buildings with multiple setbacks and would discourage buildings with wide, uniform facades that are often associated with strong building-induced winds. The Plan contains a policy of wind tunnel testing of massing proposals to help ensure that adverse pedestrian winds are avoided and suggests a maximum windspeed criterion of eight miles per hour in pedestrian areas.

The Downtown Plan also contains several sunlight-protection policies designed to limit future reductions in sunlight duration at selected parks, plazas, public sidewalks and pedestrian streets. Increased height limits and TDR provisions of the Plan for the South of Market area would generally accelerate reduction of sunlight in that area, creating potential conflicts between height limits and sunlight access provisions of the Plan.

Skyline Image

Skyline impacts would be principally related to the densities of new development; heights and bulks of the buildings permitted; provisions for reducing bulk at upper levels; shaping tops and otherwise configuring building profiles; provisions for facade treatments and materials; and provisions for distribution of new growth, particularly with respect to existing topography and building forms. The Downtown Plan would include a system of bulk controls that would reduce building bulk at upper levels and would shape building tops. In general, development would be concentrated south of Market east of YBC, and the bulk controls would physically shape and geographically distribute new construction.

I. AIR QUALITY

Short-Term Construction Impacts

Demolition, excavation, and construction of new buildings in the downtown study area would generate total suspended particulate (TSP) emissions and would probably cause violations of the state 24-hour TSP standard in the immediate vicinity of construction sites. It is not possible at the plan level of detail to make accurate projections of TSP concentrations and frequencies of standard violations caused by demolition and construction activities.

Long-Term Operation Impacts

Pollutant Emissions

The Downtown Plan would cause air pollutant emissions in San Francisco and throughout the region. Most of these emissions would be associated with downtown-related motor vehicle travel. Natural gas combustion by and electricity generation for building operations, and electricity generation for downtown-related transportation (BART), would contribute less to total emissions.

Total hydrocarbon (HC) emissions associated with downtown-related motor vehicle travel and with natural gas combustion by downtown buildings under the Downtown Plan are projected to be greater in 2000 than in 1990; nitrogen oxides (NOx) and carbon monoxide (CO) emissions are projected to be less. Emissions of all three pollutants under the Downtown Plan would be less in 2000 than in 1984, because declining HC, NOx, and CO emission rates per average motor vehicle would more than offset the increased number of emission sources. Emissions of total suspended particulates (TSP) and sulfur oxides (SOx) under the Downtown Plan are projected to be greater in 2000 than in 1990 or in 1984, because average-vehicle emission rates would decline only slightly for TSP and not at all for SOx.

Ozone Concentrations

An imbalance between projected HC and NOx emissions (both of which are chemical precursors of ozone) would exist under the Downtown Plan; that is, NOx emissions would exceed HC emissions by about 0.2 tons per day. Thus, on the basis of the LIRAQ ozone simulations conducted for the 1982 Bay Area Air Quality Plan, Bay Area ozone concentrations would be expected to be within the federal standard in 1987 and thereafter through the year 2000, regardless of development of new commercial space in downtown San Francisco under the Downtown Plan. Furthermore, development in downtown San Francisco would not increase the Bay Area ozone concentrations which would otherwise occur (because of the NOx "quenching" effect predicted by the LIRAQ simulations). However, excess NOx emissions might have a relatively small effect (compared to that of total Bay Area or non-Bay Area emissions) on increasing ozone and/or nitrogenous oxidant concentrations further downwind, outside the Bay Area.

Carbon Monoxide Concentrations

The projected decrease in average-vehicle CO emission rates would more than offset the projected increase in area-wide and local traffic volumes under the Downtown Plan. Thus in 1990 and 2000, CO concentrations at the 11 selected intersections in the downtown study area (analyzed with the Modified Linear Rollback method) would be within the state and federal standards under the Downtown Plan.

Total Suspended Particulate Concentrations

Annual average TSP concentrations (and possibly the frequency of violations of TSP standards, with concomitant health effects and reduced visibility) in San Francisco would increase by about three percent from 1990 to 2000 and about seven percent from 1984 to 2000 under the Downtown Plan, because decreased average-vehicle TSP emission rates would not offset increased area-wide traffic volumes.

Nitrogen Dioxide Concentrations

NOx emissions associated with the entire downtown study area would decrease under the Downtown Plan, because decreased NOx emission rates would more than offset increased traffic. However, the incremental emissions associated with new downtown development could add to the increase expected for the entire Bay Area. NOx emissions (and possibly the frequency of violations of the NO_2 standard, with concomitant health effects, reduced visibility, and increased formation of acid rain downwind) would increase the expected Bay Area increase from 1984 to 2000 by about five percent (or less).

Sulfur Dioxide Concentrations

SOx emissions associated with downtown development would increase under the Downtown Plan, because SOx emission rates would remain constant and traffic would increase. However, because of the small magnitude of the increase (about 0.1 ton per day), and because the ambient concentrations of SO_2 are currently low, it is unlikely that these emissions would bring San Francisco's concentrations significantly closer to violating the standard.

J. NOISE

New development between 1984 and 1990 would not generate enough new traffic to measurably increase traffic noise levels. The rate of building construction in the C-3 District would be slightly less than in 1984; the occurrence of intrusive construction noise would also, therefore, be less. Muni peak-hour ridership would increase by an average 12% system-wide between 1984 and 1990. If Muni's diesel bus service were also increased by 12%, the occurrence of intrusive diesel bus noise along certain routes would be noticeably greater.

Outdoor street-level traffic noise levels would be similar to 1984 levels and would be very loud (typically about 70 dBA Ldn). About 70% of the new development between 1984 and 1990 would be commercial, which is moderately noise-sensitive, and about 30% of it would be residential, which is very noise-sensitive. Indoor noise levels (due to outdoor traffic noise) would not be disruptive, however, because of State-required noise insulation standards for new residential uses, and City guidelines for noise insulation for other uses.

New development between 1990 and 2000 would, along some street segments in the C-3 District, measurably increase traffic noise levels. None of these increases, however, would be noticeable to the human ear. Similar to 1984 and 1990, outdoor street-level traffic noise levels would be very loud (about 70 dBA Ldn). The noisiest subareas would be 1, 2, 4, 6 and 7. Subareas 3 and 5 would contain pockets of comparatively less noisy areas.

The rate of new building construction in the C-3 District would continue to decrease, resulting in less construction noise, on the average, than between 1984 and 1990. Muni peak-hour ridership would increase by about 12% system-wide between 1990 and 2000. Subareas which could be affected by noticeably more intrusive diesel bus noise would be Subarea 1 (Sansome and Montgomery Sts.), Subarea 3 (Sixth St.), Subarea 5 (Sutter and Post Sts.) and Subarea 6 (Sutter and Post Sts.).

About 80% of the new development between 1990 and 2000 would be commercial; about 20% would be residential. Although outdoor noise levels would be annoying, and could cause long-term hearing damage in people exposed to them all day for many years, indoor noise levels in new uses would be acceptable. This would be due to the State-required noise insulation standards for new residential uses, and to City guidelines for noise insulation for other uses. Outdoor areas associated with residential uses, such as balconies and courtyards, would be excessively noisy in Subareas 1, 2, 4, 6 and 7, and portions of Subareas 3 and 5, unless constructed above the tenth floor or shielded from traffic noise.

In Subarea 2, new buildings overlooking and within 250 ft. of the elevated James Lick Freeway would likely need special construction techniques to sufficiently reduce interior noise to acceptable levels. In Subarea 6, traffic noise could adversely affect the attractiveness of new, street-level, pedestrian-oriented retail uses.

K. SEISMIC SAFETY

A major earthquake can be expected to affect the downtown area within the next several decades. Several small and moderate quakes can also be expected in this time.

Forecasting of specific impacts of a major earthquake is dependent on knowledge of geologic conditions, building types, foundations and methods of construction; location of buildings; intensity of earthquakes, frequency and duration of shaking, time of day of earthquake, and weather conditions. In general, however, under 1984, 1990 and 2000 conditions, virtually every building in San Francisco would be expected to have some damage visible to a trained observer in a 1906-magnitude earthquake, and infrastructure elements including highways, bridges, power, communications, and port facilities in downtown could be expected to be inoperable for 24 to over 72 hours. Tsunami runup would not substantially affect downtown development, except in areas adjacent to port facilities.

In the downtown area, violent groundshaking in portions of Subareas 1, 2, and 3 would accompany a major earthquake. Areas underlain by fills would have a high potential for liquefaction and differential settlement under such shaking. Subarea 1 has and would continue to have the greatest potential of any subarea for hazards in event of a major earthquake during working hours. This is because of poor soil stability on the eastern third of this subarea, an extremely high concentration of population, many large, potentially hazardous buildings, and relatively congested streets and sidewalks. The Downtown Plan would limit growth in this Subarea. Subarea 2 also has considerable potential for damage from groundshaking and ground failure. The Downtown Plan, with its concentration of post-1990 construction in this Subarea, would increase the number of people exposed to hazards in this Subarea. Subarea 5 contains approximately 75% of all residential hotel space and 40% of all housing downtown. Many of these residential structures are reinforced concrete buildings of questionable seismic safety. Retention of these buildings would maintain their high safety risk in an earthquake. Subareas 3, 4, and 7 would incur little growth under the Downtown Plan and would not be expected to have severely increased seismic risk. Subarea 6 would have a relatively high growth rate and high employee densities under the Downtown Plan, but is geologically the safest subarea in downtown.

In the event of a major earthquake, the Office of Emergency Services would coordinate rescue operations. There is no general policy for evacuation of the City because other portions of the Bay Area also are expected to suffer severe damage in an earthquake and roads are likely to be closed.

MITIGATION OF IMPACTS

Section V of this EIR presents a number of specific measures that would reduce or otherwise alleviate the adverse environmental effects of downtown growth in general, and the Downtown Plan in particular. The most important and effective of these measures are identified above, under Environmental Impacts.

In addition to these specific mitigation measures, the EIR examines three growth rate limits as possible comprehensive measures for mitigating the effects of downtown growth. The limits examined would impose annual ceilings on the amount of new commercial office space that would be permitted in the City. These ceilings would be 0.5 million square feet per year (msf/yr.), 1.0 msf/yr. and 1.5 msf/yr. As described in Section V, to the extent that these limits would reduce the rate of downtown growth that would otherwise occur, they would generally reduce the population-related effects of growth in the downtown.

ALTERNATIVES

DESCRIPTIONS OF ALTERNATIVES

In recent years, several groups and organizations, in addition to the Department of City Planning, have proposed alternative programs for managing downtown growth.

This EIR examines the following five such alternatives ("Alternatives"), and in Section VII compares their features and effects to those of the Downtown Plan:

- Alternative 1 (the "Planning Code Alternative") consists of the C-3 District regulations, as described in the applicable sections of the present City Planning Code.
- Alternative 2 (the "Chamber of Commerce Alternative") consists of the Recommended Growth Management Program presented in Section 3 of the Downtown Growth Management Program, prepared by Bolles Associates and Livingston & Associates for the San Francisco Chamber of Commerce in October 1979.

- Alternative 3 (the "Proposition 'O' Alternative") consists of the proposed initiative ordinance, Proposition "O", which was defeated by San Francisco voters in November 1979.

- Alternative 4 (the "SFRG Alternative") consists of four initiative ordinances proposed in 1980 by San Franciscans for Reasonable Growth (SFRG). The initiatives would have amended the C-3 District regulations of the City Planning Code had they appeared on the ballot and been approved in the November 1980 election.

- Alternative 5 (the "DCP Alternative") consists of the proposed development controls for the C-3 District presented in Guiding Downtown Development, issued by the Department of City Planning (DCP) in July 1982.

COMPARISON OF IMPACTS OF ALTERNATIVES

Land Use and Employment. Under all six alternatives some growth in space and employment would occur in the C-3 District. Alternative 1, No Project, would allow for the greatest amount of additional office space and total employment. The smallest amount of office space in the C-3 District would be built under Alternative 4, but the smallest amount of total space would be built in the C-3 District under the Downtown Plan. In office space production and in total employment, the alternatives rank, from most to least: Alternatives 1, 2, 3, Downtown Plan, Alternatives 5 and 4. In total space projected for the C-3 District, the alternatives rank, from most to least, Alternatives 2, 1, 3, 4, 5, and the Downtown Plan. The Plan would limit expansion of office uses into the Union Square retail area (Subarea 6) and the portion of Chinatown presently included within the C-3 District.

Housing. The No Project Alternative (Alternative 1) would not propose any changes in housing policy and so would not increase the amount of housing that would be built under existing City policies. The most housing (approximately 4,000 additional units between 1990 and 2000) would be produced under Alternative 4, which includes both incentives encouraging housing construction and a housing requirement for new office space. Alternative 5, with a housing requirement, would produce the next largest amount of new housing, followed by Alternatives 2 and 3 with housing incentives. The Downtown Plan proposes to encourage housing production in some areas of the C-3 District (about 200 additional units are estimated between 1990 and 2000). A program similar to the present Office Housing Production Program is considered under mitigation measures in the main text of this EIR and could be applied to any alternative that does not already include such a proposal.

Transportation. Travel demand from the C-3 District would be highest under Alternative 1, No Project. Alternatives 2 and 3 would result in less travel demand than the No Project Alternative, but more than the Downtown Plan. Alternative 5 would generate slightly less travel demand than the Downtown Plan, and Alternative 4 would have the lowest travel demand. C-3 District travel demand would vary by, at most, four percent among the Alternatives, including the Downtown Plan. Transportation impacts at the regional and C-3 district screenlines would follow the same pattern of high to low as described above. Alternative 5 would be essentially equivalent to the Downtown Plan for vehicular impacts. All of the Alternatives would increase overall travel on the transportation network and would contribute to peak-hour and peak-period congestion.

Energy. Impacts generally would be related to the number of square feet of building space added to the C-3 District. All buildings would be expected to comply with energy standards required Title 24 of the California Administrative Code.

Architectural Resources and Urban Design. There are a variety of urban design features which are addressed in the six alternatives in different ways. Preservation of historically and architecturally significant buildings is addressed in most detail in the Downtown Plan, with a list of buildings required to be preserved and incentives for transfer of development rights from these and other listed buildings if they are preserved. Thus, the Plan would permit demolition of the smallest number of historically and architecturally important buildings. Alternative 1, the No Project Alternative, and Alternative 3, would include limited preservation of designated landmarks and would allow for the greatest number of demolitions of important buildings. Alternative 2 would provide some incentive for preservation but would still encourage demolition of more important buildings than would Alternatives 4 and 5; the latter Alternatives would not prohibit demolition but would offer larger incentives for preservation than Alternatives 1, 2, or 3.

More pedestrian amenities such as landscaping, interesting ground level building design, required art work, pedestrian walkways and arcades, would be provided or encouraged under the Downtown Plan than under any other alternative, with Alternative 5 a close second. The other four alternatives do not propose many changes from the present requirements found in Alternative 1, No Project. Although the No Project alternative and Alternatives 2 and 4 would provide floor area bonuses for plazas, only Alternative 5 and the Downtown Plan would require provision of recreation and open spaces as part of new office development.

The Downtown Plan contains provisions that would limit the amount of shadow on public parks, some sidewalks and a few other public spaces. Alternative 5 proposes sunlight access requirements for certain streets. Alternatives 2 and 3 indicate that sunlight access should be encouraged but include no requirements. Alternatives 1 and 4 do not address sunlight access.

Building form would be controlled by existing height and bulk limits under Alternative 1. All other alternatives would reduce height limits in some parts of the C-3 District, with the lowest under Alternative 3. Alternatives 3 and 4 would not substantially change bulk requirements, resulting in generally rectilinear buildings with square tops, similar to those expected under the No Project Alternative. The Downtown Plan and Alternatives 2 and 5 would add bulk and setback controls that would require more variety in treatment of building tops. Both Alternative 5 and the Plan would permit taller buildings than other alternatives in the eastern south of Market area (Subarea 2), with lower height limits in Subarea 1.

Air Quality. Impacts of the six alternatives on air emissions would be directly related to transportation effects. No alternative would cause regional violations of the Bay Area Air Quality Management Plan. All six alternatives could lead to increased frequency of violations of total suspended particulate standards in San Francisco and of the nitrogen dioxide standard in the Bay Area. In terms of amount of pollutants, the alternatives would be ranked in the following order, from most to least amounts: Alternatives 1, 2, 3, Downtown Plan, Alternatives 5 and 4. This ranking does not take into account emissions from traffic travelling to work locations in other areas of the region that may be less well-served by transit, instead of to work in the C-3 District, that may occur as a result of implementation of the Plan or some of the alternatives; it is not expected that such travel would result in a substantial increase in air pollutants in the region.

Noise. No alternative would cause noticeable increases in the existing ambient noise levels.

Seismic Safety. All six alternatives would replace some less seismically sound buildings with new buildings built to a stricter seismic standard. All alternatives would expose more people to seismic hazards in the downtown area. Alternatives allowing larger increases in the number of C-3 District workers would expose more people to this hazard, but alternatives requiring or encouraging more preservation of older buildings, while not exposing as many people to hazard, could expose some people to greater hazards unless the buildings required to be preserved were also required to meet more stringent seismic safety standards. During working hours the alternatives would be ranked in the following order, from potentially most hazardous to potentially least hazardous: Alternatives 1, 2, 3, Downtown Plan, Alternatives 4 and 5. During evenings and non-work days the alternatives would be ranked in the following order: Alternatives 2, 4, 3, 5, Downtown Plan, and Alternative 1.

II. BACKGROUND AND INTRODUCTION

BACKGROUND

For a number of years there have been differing opinions about the growth of downtown San Francisco. To address the issues of this controversy several organizations, including the Department of City Planning, San Franciscans for Reasonable Growth and the San Francisco Chamber of Commerce, proposed regulatory alternatives for managing downtown development.

In 1980, the San Francisco City Planning Commission resolved to evaluate the potential environmental impacts of several of these alternatives. With this information, the Department of City Planning could develop for public review comprehensive revisions to sections of the City Planning Code relevant to downtown. To help in this task, the Commission authorized preparation of a Downtown EIR (Environmental Impact Report) and established an independent EIR Contract Monitoring Panel.

Private sector interests contributed monies which were used by the Panel to fund preparation of initial materials for the Downtown EIR. In order to make the initial materials available to the public at the earliest possible date, they were published in May, 1983, as the document titled Growth Management Alternatives for Downtown San Francisco, Downtown EIR Consultant's Report. The Consultant's Report provides an exhaustive comparison of five alternative growth scenarios. The report is a product of the consultant, Environmental Science Associates, Inc., and represents the consultant's judgment.

As anticipated by the City Planning Commission (see Resolution No. 8730), the analysis of the five alternatives in the Consultant's Report assisted the Department of City Planning in developing a refined new proposal for downtown controls, known as the Downtown Plan. This 'second generation' proposal supplants the 'Guiding Downtown Development' alternative in the original Consultant's Report and is analyzed for the first time in this EIR. Accordingly, although this EIR carries forward the results of the alternatives analysis from the Consultant's Report, it focuses on the proposed Downtown

Plan. This EIR may be read and used independently of the Consultant's Report since the significant data and results of the analysis in the Consultant's Report are repeated or summarized in this EIR. The Consultant's Report itself is available for review at the Department's offices at 450 McAllister Street, 5th Floor, and may be purchased at the San Francisco office of Environmental Science Associates, Inc., Fox Plaza, 1390 Market Street, Mezzanine Level for $41.06.

APPROACH

FOCUSING

Through the concept of "focusing" the EIR on those issues identified in the initial study (see Appendix A) as having the potential to create significant adverse environmental effects, the report is intended to avoid extraneous detail and concentrate on environmental topics of principal public interest and concern. (See also Fiscal Factors, page II.11, and Environmental Effects Found Not to be Significant, page II.13.)

PRESENTATION

The large amount of information collected and analyzed for this EIR necessitates a selective approach to the presentation of data. The tables and figures included in the text highlight background information and reveal patterns in the effects of the alternatives. Supplemental tables are referenced in appropriate appendices and supporting documentation. The intent of this approach to data presentation is to avoid repetition of similar statistics, to communicate most economically the information of greatest interest to the reader, and to minimize the overall volume of the report. This EIR incorporates portions of the Consultant's Report by reference and summarizes portions of the Report throughout the EIR. Detailed documentation of all analyses is available for public review at the San Francisco Department of City Planning, 450 McAllister Street, 5th Floor.

STRUCTURE OF STUDY

Project and Alternatives

The Downtown Plan is the "project" analyzed in this EIR. The EIR examines effects of the Downtown Plan for regulating future development in the Downtown Commercial use district of San Francisco (hereinafter referred to as the C-3 District).

Unlike most EIR's that cover a "preferred project" in detail and treat alternatives less rigorously, the five Alternatives were analyzed at a level of detail essentially equal to that used for the Downtown Plan. Results of the analyses of the Downtown Plan are presented in detail in this EIR while results of the analyses of the other five alternatives are presented in the Consultant's Report. Section VII of this EIR, entitled "Alternatives," presents and references information from the Consultant's Report, and compares effects of the Downtown Plan with effects of the other five Alternatives.

Timeframe of Analysis

The EIR establishes an analytical base case for 1981/82 from which is forecast the Environmental Setting for 1984. The 1984 setting is forecast from information on development existing and under construction in the C-3 District, and other applicable regional and local data. From this 1984 setting, the environmental and urban design effects of the Downtown Plan are projected to the years 1990 and 2000.

The analysis ended with the year 2000, 16 years into the future. Forecasts and projections become increasingly speculative the further they go into the future, and developing such numbers creates an inaccurate impression about their validity. In addition, the Department anticipates that by the year 2000 other issues will have arisen which will compel revision of growth management provisions for downtown. Comprehensive planning and zoning generally require such revisions periodically. The last major revisions involving comprehensive planning effecting downtown occurred in 1978, with the adoption of the Commerce and Industry Element. The present C-3 zoning was enacted in 1968.

Growth Rate Limits

The Environmental Setting and Impact section (Section IV.) examines the effects of the Plan assuming that the Plan would be implemented without regulatory ceilings on the rate of new commercial office development in the City. The Mitigation Measures section (Section V.) addresses the effects of three such ceilings:

- 0.5 million square feet per year (msf/yr.)
- 1.0 msf/yr.
- 1.5 msf/yr.

These growth rate limits can then be applied to all Alternatives.

Draft and Final EIR

The draft environmental impact report (DEIR) for the Downtown Plan consists of this document, together with its companion appendix document. The final environmental impact report for the Downtown Plan will consist of these two documents and a third document that will contain public comments received on the DEIR; a list of persons, organizations and agencies commenting on the DEIR, responses to significant environmental points raised in the comments; and any other information that may be added by the City.

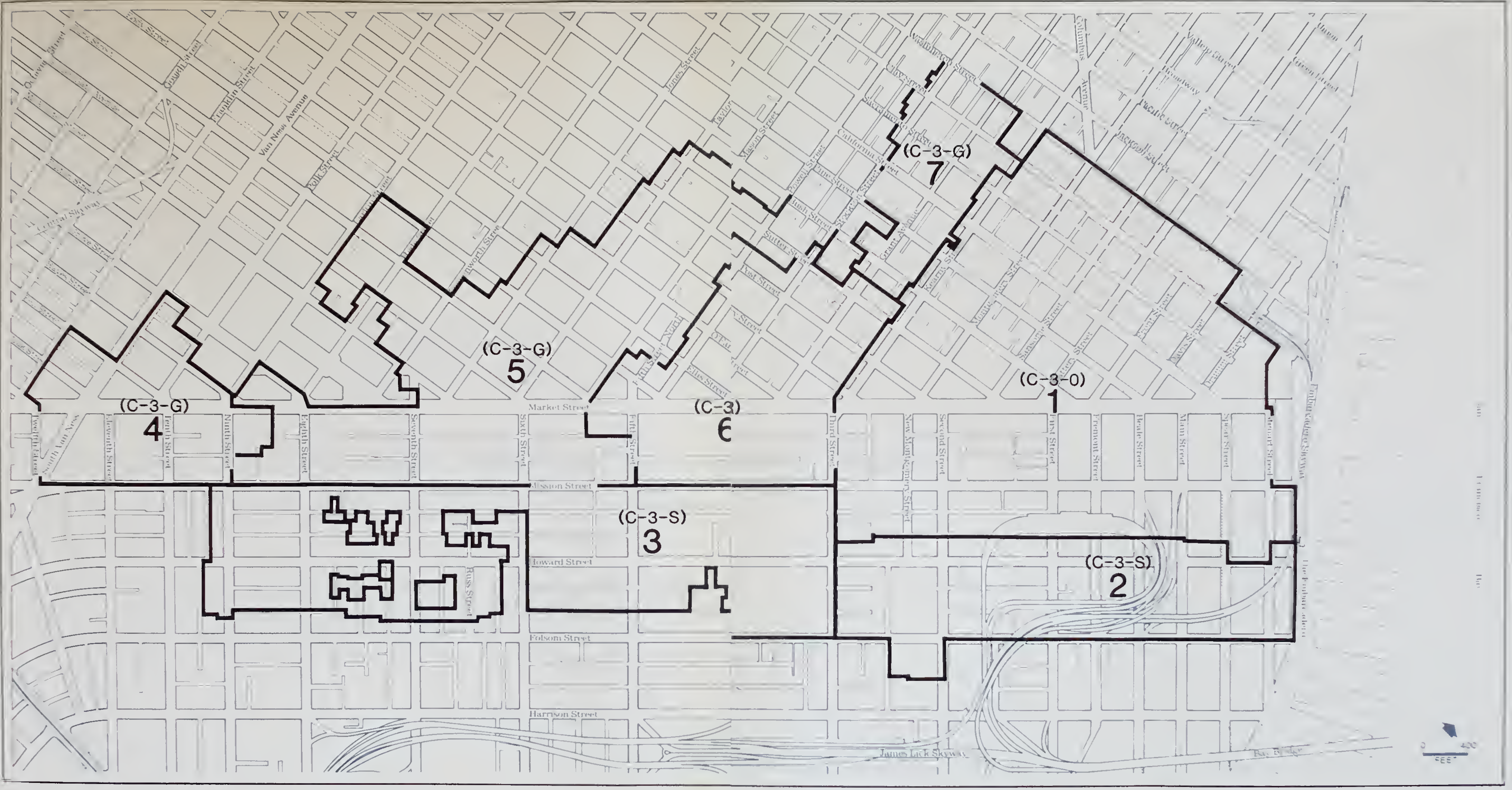
Geographic Study Areas

The geographic study areas of the report are intended to permit popular identification of the study units; provide a common geographic vocabulary for comparisons among study areas and Alternatives; conform to existing data for comparisons among study areas and Alternatives; conform to existing data availabilities and political boundaries; recognize individual regulatory features of the Alternatives; and permit rational aggregation and disaggregation of data as appropriate to each topic of analysis.

The Downtown Study Area is defined as the present C-3 District (see Figure II.1). In general, it is to this area that the controls examined in this report would directly apply.

The Downtown Study Area has been subdivided for the purposes of this EIR into the following seven primary subareas (hereinafter referred to as "subareas"):

1. Central Office Subarea (C-3-0)
2. East South of Market Subarea (East C-3-S)



1 CENTRAL OFFICE SUBAREA (C-3-0)

2 EAST SOUTH OF MARKET SUBAREA (EAST C-3-S)

3 CENTRAL SOUTH OF MARKET SUBAREA (WEST C-3-S)

4 SOUTH VAN NESS SUBAREA (SOUTH C-3-G)

5 TENDERL SUBAREA (CENTRAL C 3 G)

6 UNION SCRE SUBAREA (C-3-R)

7 CHINATO SUBAREA (NORTH C 3 G)

NOTE See Ta III.2 for explanation of use district symbols

FIGURE II.1:
DOWNTOWN STUDY AREA
AND C-3 USE DISTRICTS

SOURCE San Francisco Planning Code and
Environmental Science Associates Inc

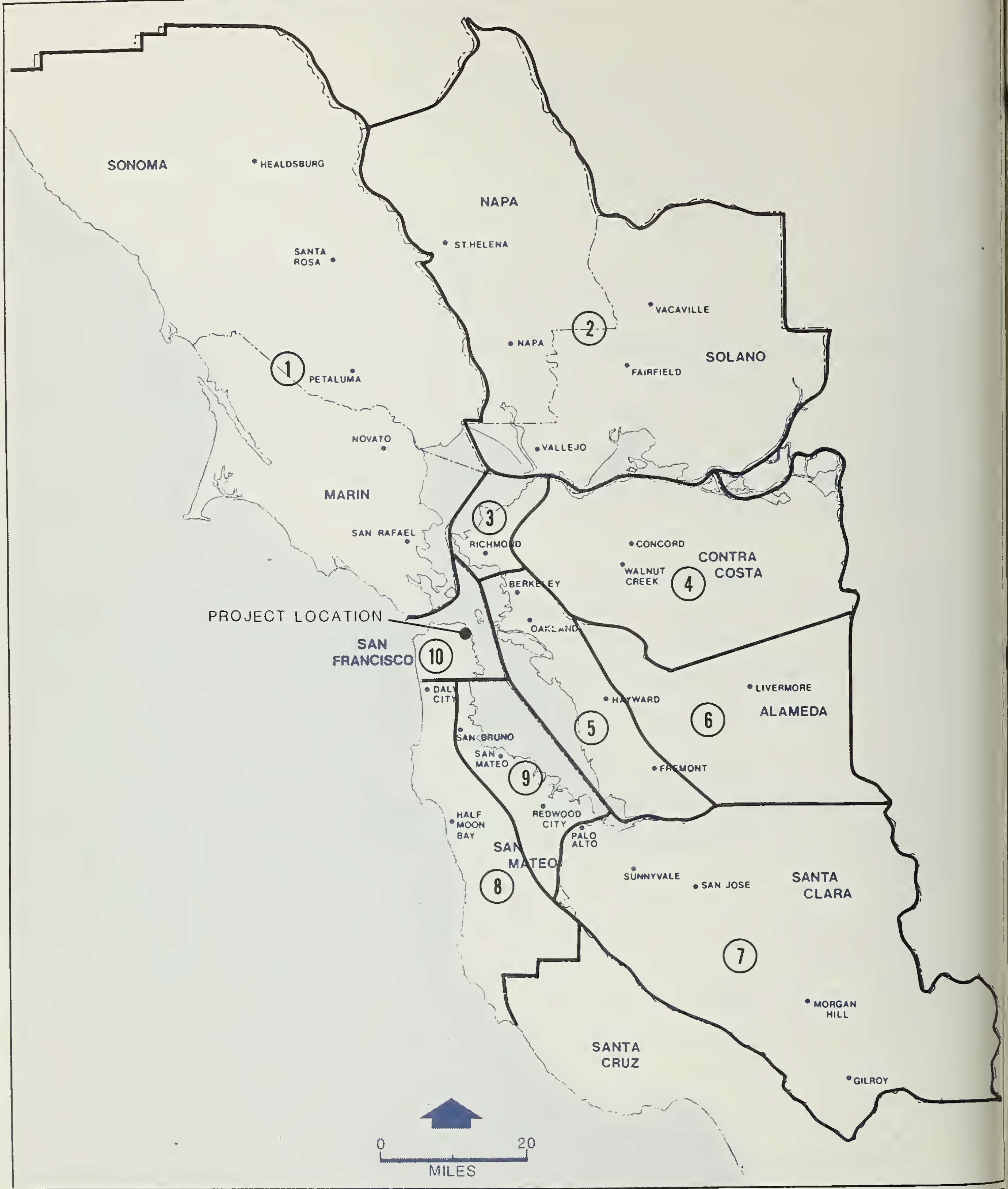
3. Central South of Market Subarea (West C-3-S)
4. South Van Ness Subarea (South (C-3-G)
5. Tenderloin Subarea (Central C-3-G)
6. Union Square Subarea (C-3-R)
7. Chinatown Subarea (North C-3-G)

Note that while the boundaries of these subareas exactly conform to existing C-3 use district boundaries, they do not necessarily conform to use district boundaries proposed in the Downtown Plan. Findings and analysis of the use districts proposed in the Downtown Plan were converted to the seven subareas of the existing C-3 District for presentation in Section IV of this EIR, using assumptions described in Section IV.B. The geographic framework of existing C-3 use District boundaries is used to permit a geographically consistent basis of comparison between the Downtown Plan and the Alternatives examined in the Consultant's Report and in Section VII of this EIR.

Pages II.5-II.7 of the Consultant's Report presents information about San Francisco Study Districts and Study areas that is hereby incorporated by reference and summarized below. The City is divided into four study areas: Southeast, Southwest, Northwest and Northeast. These study areas generally conform to and consist of existing planning districts which are used by the Department of City Planning.

Regional Study Areas (see Figure II.2) generally consist of counties or subdivisions of counties determined by characteristics of transportation corridors and patterns. For the purposes of this report, the region has been divided into the following ten Regional Study Areas.

- Marin/Sonoma
- Napa/Solano
- Western Contra Costa
- Eastern Contra Costa
- Western Alameda
- Eastern Alameda
- Santa Clara
- Western San Mateo
- Eastern San Mateo
- San Francisco



1 MARIN/SONOMA
2 NAPA/SOLANO
3 WESTERN CONTRA COSTA
4 EASTERN CONTRA COSTA
5 WESTERN ALAMEDA
6 EASTERN ALAMEDA
7 SANTA CLARA
8 WESTERN SAN MATEO
9 EASTERN SAN MATEO
10 SAN FRANCISCO

FIGURE II.2:
REGIONAL STUDY AREAS

SOURCE: Environmental Science Associates, Inc.

INTRODUCTION TO GROWTH FORECASTS

LOCAL, REGIONAL, AND NATIONAL CONTEXT

The forecasts of development and employment growth that are developed and used in this EIR to evaluate the impacts of the Downtown Plan have their basis in detailed analysis of the economic activities that are likely to locate in the C-3 District. This analysis considered the relationship between the C-3 District, the rest of San Francisco, and the rest of the Bay Area region in terms of growth potentials and the distribution of different types of economic activity.

Existing and future C-3 District economic activity was estimated for different economic sectors or business activities. This detailed forecasting analysis considered citywide and regional growth patterns, City and regional forecasts from other sources, and review of business trends for the relevant industries, as well as close analysis of the types of activities and functions located in the C-3 District and how this mix would be likely to change over the next twenty years given national and regional business trends and changes in location opportunities. The comparative position of the C-3 District was assessed relative to other potential location options in San Francisco, in the Bay Area, and elsewhere. Thus, C-3 District economic growth is projected and analyzed within the context of local, regional, and national economic factors and trends.

From the regional perspective, the analysis incorporates the following factors which are important in shaping the region's future development pattern: land supply, space availability and rents, population, housing, labor supply, and transportation accessibility. The regional scenario incorporated in this EIR analysis is consistent with the assumptions of regional agencies, notably the Association of Bay Area Governments (ABAG).

Variations in the regional growth scenario would have little effect on the C-3 District forecasts. Changes in the scale or timing of individual projects such as suburban office or business parks would not alter the C-3 District forecasts. Major changes in land use policy or in infrastructure plans and programs could have an effect, though the difference from the assumed scenario would have to be substantial to be reflected in the C-3 District forecasts.

Growth potential in the rest of San Francisco was an important component of the regional context. The scenario incorporated herein reflects the increasing relative importance of growth potentials in areas adjacent to the C-3 District and recognizes future projects and plans for these areas. Because of the strength of preferences for the C-3 District by many of the business activities analyzed, development in the rest of the City is more sensitive to C-3 District policies and the amount of growth accommodated there than is C-3 District growth to policies and development potential elsewhere in the City.

Substantial variations in underlying national and internatioinal economic factors and trends could affect the C-3 District forecasts. Because these types of factors also govern economic growth throughout the region and nation, variations affecting C-3 District growth would have similar effects on growth in the region or other larger areas. Therefore, the C-3 District forecasts would continue to reflect the local, regional, and national context, even if there was variation in the level of economic growth.

Several sections of this EIR describe the assumptions about the local, regional, and national context. Section IV.C, Business and Employment Impact, identifies the important factors behind the employment forecasts for the different economic sectors including description of the location criteria of business activities of various types (see pp. IV.C.31-IV.C.37). Appendix H in this EIR and in the Downtown EIR Consultant's Report describes the specific assumptions for each business activity and compares the EIR forecasts to other forecasts. The local and regional context for forecasting residence patterns is described in Section IV.D, Residence Patterns and Housing Impact (see pp. IV.D.58-IV.D.63) and in Appendix I. The local and regional travel context for the transportation analysis is described in Appendix J.

A PERSPECTIVE ON THE ANALYSIS OF CUMULATIVE DEVELOPMENT

The impact assessments in this EIR are based on forecasts of growth between 1984 and 2000 under the Downtown Plan. Detailed forecasts were prepared for the C-3 District which describe employment growth and the amount and type of space that would be absorbed over this period. Growth potentials in areas outside the C-3 District were also considered in the EIR both for their possible effects upon future development within the C-3 District, and for the possible effects of future development in the C-3 District upon growth potentials outside the C-3 District. In fact, the analysis supporting the forecasts and impact assessments included consideration of projects under construction, approved, and in review citywide, as well as those planned for redevelopment areas. The detailed economic forecasting methodology is described in Sections IV.B and IV.C and in Appendices G and H.

The forecasting methodology used in this EIR has not been previously used as a basis for cumulative impact assessment in individual project EIRs. Rather, in these previous EIRs, the basis for cumulative impact assessment has been an estimate of land uses within the area to be affected by the project, to which has been added an estimate of reasonably foreseeable future development, based upon a cumulative list of development applications filed with the City. Most recent project EIRs have used a cumulative list of office projects including those projects which had progressed for enough in the Department of City Planning to have a Preliminary Draft EIR in review or which had published a preliminary Negative Declaration. Based on a recent decision of the California Court of Appeals (San Franciscans for Reasonable Growth v. City and County of San Francisco, January 24, 1984) this list could be expanded to include all active office projects on file in the Department.

Each methodology described above, the "forecasting" methodology and the "cumulative list" methodology, can provide an acceptable basis for analyzing cumulative environmental effects of future development. However, in this EIR, in part because it addresses a relatively longer time frame and larger geographic area than any previous project EIR, the forecasting methodology was found to have certain advantages over the cumulative list approach:

- the forecasting methodology anticipates local effects of national, regional and local trends in development activity, and may be used to test the sensitivity of the forecasts to changes in these factors over time;
- it avoids analytic inaccuracies due to deletion of specific projects which are abandoned or disapproved.
- it avoids analytic innaccuracies due to differences between proposed project sizes and completion dates, and actual project sizes and completion dates;
- it provides a more stable, and therefore more workable, cumulative data base (i.e., the cumulative "baseline" need not be revised each time an individual

project is modified, or added to or dropped from the cumulative list, since the forecasting methodology anticipates such activity on a aggregate, long-term basis);

- it provides a basis for discounting employment losses that occur concurrently with employment gains attributable to new development;
- it provides a basis for accommodating shifts in employment densities and types within existing development;
- it permits assessment of cumulative impacts that may occur beyond the timeframe required for completion of known, proposed projects; and,
- it permits estimation of the rate at which new development will be absorbed by the market.

The analysis of the growth of employment and space to the year 2000 under the Downtown Plan indicates that the amount of space currently on the cumulative list of projects would be absorbed during the forecast period. For example, this EIR estimates a growth in office space of 8 million square feet from 1984 to 1990 and another 15 to 24 million square feet from 1990 to 2000, depending on the planning alternative selected. By comparison, the cumulative list (covering projects in the C-3 District) presently includes about 13 million square feet./1/ This comparison illustrates both the strengths and the shortcomings of the cumulative list approach. The list is accurate in that the projected square footage will probably be built before the year 2000. On the other hand, the total square footage on the list would probably not be built by 1990. Finally, in either time frame, the buildings which are constructed may or may not be the actual buildings in the specific locations on the cumulative list.

FISCAL FACTORS

The Consultant's Report included a fiscal section which analyzed whether additional space and activity in the C-3 District increased City costs more than City revenues, and what differences in the Alternatives affected the balance between increased costs and increased revenues. It addressed just the direct effects of C-3 District growth on City finances. Direct effects were the changes in revenue resulting from changes in space and economic activity, and the changes in public service costs resulting from changes in demand for City services, in the C-3 district.

The Consultant's Report did not analyze indirect effects on City finances, although activity in the C-3 District likely has such indirect effects. Indirect effects are difficult to identify, due to complexities in tracing the influences of the downtown on other areas of the City and complexities specifying which impacts are a consequence of downtown growth and which result from other factors. Further, it is difficult to establish a reasonable basis for allocations of costs and revenues for City services that are only marginally affected by development in the C-3 District, such as social services, libraries and the City's park and recreation services. For the above reasons, the Consultant's Report did not quantify any indirect costs.

Projections of direct City General Fund revenues for the Alternatives examined in the Consultant's Report ranged from $70,830,000 for the least-growth Alternative to $89,040,000 for the greatest-growth Alternative, a difference of $18.2 million. Not unexpectedly, new office construction has a major effect on direct downtown revenues, as property taxes and payroll and business taxes contribute over three-quarters of the amount. The variation in direct City costs for the Alternatives was much less than the variation in revenues, and ranged from $14,480,000 to $15,580,000, a difference of $1.1 million. This evaluation included Police, Fire and Municipal Railway as the City services most directly affected by additional growth in the C-3 District. The conclusions of the Consultant's Report concerning direct revenues from the C-3 District available for other city services (i.e. the surplus after direct costs were deducted from direct revenues) ranged from $59,210,000 to $76,950,000, a difference of $17.7 million.

The Consultant's Report found that the ratio of "revenue available for other City services," compared to the square footage of development, remained similar for the various Alternatives. The direct fiscal benefits of each Alternative would be roughly proportional to the square footage of development anticipated. Again, no indirect costs and benefits were quantified. It is likely that indirect costs and benefits would also be roughly proportional to that amount of development.

Anticipated square footage of development under the Downtown Plan falls within the range of development projected for the Alternatives. The Plan's direct fiscal benefits would likely be roughly proportional to its square footage of development, as with the other Alternatives, and would likely fall within the range of those Alternatives' direct fiscal benefits. As with the Alternatives, indirect costs and benefits cannot be quantified for the Downtown Plan.

In summary, the fiscal analysis in the Consultant's Report was able to provide estimates of direct costs and revenues, but not estimates of indirect costs and revenues. That partial picture does not provide the complete balance sheet for downtown development. Any such balance sheet would depend upon assumptions in tracing downtown development influences, and upon somehow establishing a reasonable basis to allocate costs and revenues for City services only marginally affected by downtown. Such judgments go beyond the scope of this report as well as that of the Consultant's Report. The Consultant's Report is hereby incorporated by reference for its discussion of fiscal factors in the setting (Section IV.G), impact (Section V.G), mitigation (Section VI.G) and Appendix (Appendix L) sections. No further discussion of fiscal factors is included in this report.

ENVIRONMENTAL EFFECTS FOUND NOT TO BE SIGNIFICANT

In May 1981, the Department of City Planning prepared an initial study of several alternative growth management proposals for the downtown commercial district. The initial study found that the environmental effects of implementing the alternatives could not be significant in the following topical areas:

- schools
- communications systems
- water services
- sewer services
- parks and recreational facilities
- construction noise
- odors
- plant life
- animal life
- storm water runoff
- water quality
- water use
- natural resources (except energy)
- risk of release of hazardous substances and explosion
- hydrology and geology (except seismology)
- archaeologic, ethnic and cultural resources (except architectural resources)

These findings and the bases of these findings are set forth in the initial study, which is incorporated in this report as Appendix A. The effects found not be significant in the initial study are not discussed further in this EIR.

NOTE - Background and Introduction

/1/ The total office square footage on the most recent expanded cumulative list is about 25 million. However, this list covers the greater downtown area (from China Basin to the north of Market, including Van Ness Avenue up to about Pine Street, all of the C-3 District, parts of Chinatown and the northeast waterfront at the base of Telegraph Hill to about Bay Street). The list begins at about mid-1982 and includes about 6.4 million square feet of office space already completed at the end of 1983. In order to compare similar time frames with both beginning in 1984, the projects already completed should be subtracted from the total, resulting in an adjusted total of 18.8 million square feet. Approximately 5.9 million square feet of this remaining space falls outside the C-3 District. To compare similar areas, these non-C-3 projects need to be subtracted from the total, leaving about 13 million square feet of office space on a cumulative list covering the C-3 District from 1984 to whenever these or other similar projects are completed.

It should be noted that non-C-3 space on the cumulative list is accommodated for in the transportation analysis in this EIR through the use of growth factors that have been applied to the volumes of non-C-3 drivers or riders on the transportation systems. This method is described in detail in Appendix J.

III. DESCRIPTION OF THE DOWNTOWN PLAN

OBJECTIVES AND IMPLEMENTING ACTIONS

The Downtown Plan is a proposed set of growth management and land use controls, and related regulatory measures, prepared by the Department of City Planning (DCP) for the Downtown Commercial (C-3) use districts of San Francisco (see Figure II.1, p.II.5). The Plan is presented in a 145-page document, The Downtown Plan Proposal for Citizen Review, which was published by the Department in August, 1983./1/

The objectives of the Downtown Plan may be grouped into six topical areas which correspond to the six chapters of the Plan (Space for Commerce, Space for Housing, Open Space, Preserving the Past, Urban Form and Moving About). Most objectives of the Plan are contained in existing functional elements of the citywide Master Plan such as, the Commerce and Industry Element; Residence Element; Urban Design Element; and Transportation Element. The Downtown Plan objectives are summarized by chapter as follows:

Space for Commerce

- Maintain and improve San Francisco's position as a prime location for financial, administrative, corporate and professional activity.
- Improve the downtown as the region's prime location for specialized retail trade.
- Enhance San Francisco's role as a tourist and visitor center.
- Retain a diverse base of support commerical activity in and near downtown.
- Provide adequate space to meet demand for future office, retail, hotel and related uses in downtown San Francisco.

Space for Housing

- Expand the supply of housing in and adjacent to downtown.
- Protect residential uses in and adjacent to downtown from encroachment by commercial uses.

Open Space

- Provide quality open space in sufficient quantity and variety to meet the needs of downtown workers, residents, and visitors.
- Create an open space system accessible to and usable by everyone downtown.
- Provide contrast and form by consciously treating open space as a counterpoint to the built environment.

Preserving the Past

- Conserve resources that provide continuity with San Francisco's past.

Urban Form

- Create an urban form for downtown that enhances San Francisco's stature as one of the world's most visually atttractive cities.
- Create and maintain a comfortable pedestrian environment.
- Create a building form that is visually interesting and harmonious with surrounding buildings.
- Create and maintain an attractive, interesting urban streetscape.

Moving About

- Develop transit as the primary method of travel to and from downtown.
- Ensure that the number of auto trips to and from downtown will not be detrimental to the growth or amenity of downtown.
- Provide for safe and convenient bicycle use as a means of transportation.
- Provide the type and level of transportation services needed to maintain the economic vitality of the downtown business shopping districts.
- Improve facilities for freight deliveries and business services.
- Improve the downtown pedestrian circulation system, especially within the core, to provide for efficient, comfortable and safe movement.

Table III.1 summarizes the implementing actions of the Plan. Table III.2 shows the uses that would be permitted in the C-3 use districts under the Plan. Figures III.1 through III.3 show the use districts, height and bulk districts, and bulk controls proposed in the Plan. (Text continues on p. III.15.)

TABLE III.1: SUMMARY OF DOWNTOWN PLAN

PART I: BASIC LIMITS ON BUILDING FLOOR AREA, HEIGHT, BULK, AND USE CONSIDERED IN CONSTRUCTION FEASIBILITY ANALYSIS (SEE APPENDIX D) AND REAL ESTATE DEVELOPMENT FORECASTS (SEE APPENDIX G)

1.	Floor Area Ratio (FAR) (a)	C-3-0	10:1 Basic; maximums using transferable development rights (TDR) determined by height and bulk limits.
		C-3-R	6:1 Basic; maximums using TDR determined by height and bulk limits.
		C-3-G	8:1 Basic; maximums using TDR determined by height and bulk limits.
		C-3-S	6:1 Basic; maximums using TDR determined by height and bulk limits.
		C-3-0(SD)	6:1 Basic; maximums using TDR determined by height and bulk limits.(b)
		C-3-YBC	The area designated C-3-YBC is subject to the Redevelopment Plan of the San Francisco Redevelopment Agency. The area will not be subject to the provisions of the City Planning Code until 2006. Assumptions concerning development in this area through the year 2000 are therefore based on the Redevelopment Plan not the Downtown Plan.
2.	Height Limits	Height limits are shown in Figure III.2, p. III.13. The ranges of height limits in each C-3 use district are shown below:	
		C-3-0	50 - 550 ft.
		C-3-R	80 - 375 ft.
		C-3-G	70 - 320 ft.
		C-3-S	50 - 180 ft.
		C-3-0(SD)	65 - 450 ft.
3.	Bulk Limits	Bulk limits are shown in Figure III.2, p. III.13. Boundaries of bulk districts coincide with those of height districts. Four designations for bulk limits are shown in the Downtown Plan and Figure III.2:	
		E	Maximum plan length (facade) above 65 ft. = 110 ft. Maximum diagonal plan dimension above 65 ft. = 140 ft.
		F	Maximum plan length (facade) above 80 ft. = 110 ft. Maximum diagonal plan dimension above 80 ft. = 140 ft.
		X	Bulk limits do not apply.
		S	Bulk limits would apply to four parts of a structure: the base, the lower tower, the upper tower and the upper tower extension. The controls are summarized in Figure III.3, p. III.14. In addition to the basic restrictions on building mass required by the bulk controls, buildings would be required to be massed within the limits of the height and bulk controls, to create "distinctive building tops."

TABLE III.1: SUMMARY OF DOWNTOWN PLAN (Continued)

3.	Bulk Limits (Continued)	Additional policies and implementing actions that could affect the bulks of individual buildings include: - excluding cornices and other decorative projections from measurements of maximum plan width and maximum diagonal dimension; - requiring rooftop mechanical facilities or other penthouse uses to be integrated into building design; - permitting visually interesting vertical attachments (such as flagpoles); - requiring setbacks and separation of towers; - establishing sun access criteria for parks, plazas, squares, lunchtime malls and certain public sidewalks; - requiring design review of wind speeds created by development projects; and - requiring setbacks above a building base to maintain the continuity of the predominant streetwalls along the street.
4.	Use Districts	Proposed use districts are shown in Figure III.1, p. III.12. Uses permitted, conditionally permitted and not permitted in each use district are shown in Table III.2, p. III.13. The Downtown Plan proposes several changes in C-3 use district boundaries which may be seen in Figure III.1 and in the Downtown Plan (see Plan, Figures 1, 2, 3 and 4, pp. 28, 31, 34 and 37).

PART II: REQUIREMENTS AND FAR BONUSES RELATED TO HOUSING

1.	Development Requirements	The Downtown Plan would not require construction or rehabilitation of housing as a condition of approval of development projects. (See Section V.D., housing mitigation, for discussion of the Office-Housing Production Program (OHPP), a separate City program that does impose such a requirement; see also, Plan, p. 3).
2.	Development Bonuses / Allowances / Incentives	Housing in excess of the basic allowable floor area would be permitted as a conditional use in the C-3-G and C-3-S use districts (see Plan, p. 40). Solariums would qualify as usable open space. Rear yard requirements for housing in mixed use structures would be waivable in some cases (see Plan, p. 40).

TABLE III.1: SUMMARY OF DOWNTOWN PLAN (Continued)

3.	Additional Restrictions and Measures Related to Public Housing Policy	The Plan suggests that an ordinance regulating demolition or conversion of housing units in the C-3 district "should be considered." (See Plan, p. 44). The Plan also calls for implementing redevelopment plans that include housing (e.g. the Rincon Point - South Beach Plan and the Yerba Buena Center Plan); implementing zoning changes in areas outside the C-3 District that are subject to other City plans (e.g. the Van Ness Avenue corridor, Rincon Hill, and North of Market); maintaining existing controls on the conversion and demolition of existing residential hotel units; and studying rezonings of mixed-use residential areas that are or would be outside the C-3 District (e.g. Central South of Market, South Van Ness, Chinatown, and North Beach) (see Plan, pp. 42-47).
PART III: RESTRICTIONS, ALLOWANCES AND INCENTIVES RELATED TO PRESERVATION OF ARCHITECTURAL RESOURCES		
1.	Transfer of Development Rights (TDR) from Architectural Resources to New Development Projects	The Downtown Plan would permit transfer from the site of an existing architectural resource, to the site of a new development project, the difference between the actual square footage of the resource building and the square footage of a new building that could be built on the resource site, as determined by the applicable basic floor area ratio at the resource site (see Plan, pp. 5 and 66). The Plan identifies four "categories" of resources from which such transfers could occur (see Plan, pp. 66-73). Under the Plan, such transfers could occur from resource sites to new development sites in the same C-3 use district, or from resource sites in any C-3 use district to development sites in the proposed C-3-O (SD) use district (see Figure III.1, p. III.12).
2.	Allowances and Incentives in Addition to TDR	None.
3.	Restrictions and Requirements Related to Protection of Resources at Development Sites and Resource Sites	
	- General	Demolition of significant buildings (Categories I and II) would be generally prohibited. Alteration of significant buildings would be permitted subject to specific guidelines (see Plan, p. 69). The extent of alteration permitted in Category II buildings would generally be greater than that permitted in Category I buildings (see Plan, pp. 66 and 69). Demolition or alteration of contributory buildings (Categories III and IV) would be permitted, but if the contributory building is in one of five Conservation Districts proposed by the Plan (see Plan, pp. 74-78), that is, if it is in Category IV, its replacement building would be subject to review to assure maintenance of the character of the conservation district.

TABLE III.1: SUMMARY OF DOWNTOWN PLAN (Continued)

- TDR	Alteration of a contributory building would be subject to the alteration guidelines for significant buildings in order for the contributory building to retain its TDRs (see Plan, p. 71). Once development rights were transferred from a contributory building, alteration or demolition of the building would be regulated by the rules applicable to significant buildings (see Plan, p. 71).
4. Additional Measures Related to Architectural Preservation Policy	The landmark designation process established in Article 10 of the City Planning Code would be retained, but the landmarking function in the C-3 use districts would be shifted to buildings with special historic or cultural significance as distinguished from buildings with special architectural or environmental qualities (see Plan, p. 73).
PART IV: ADDITIONAL REQUIREMENTS, ALLOWANCES, INCENTIVES AND POLICIES	
1. Recreation and Open Space	
- General	The Plan would require usable indoor and outdoor open space, accessible to the public, as part of new C-3 development.(c) Minimum ratios of usable open space to gross sq. ft. of new construction would be as follows (see Plan, p. 60): C-3-0 1:50 C-3-R 1:100 C-3-G 1:50 C-3-S 1:50 C-3-0(SD) 1:50 The open space provided could be located on the development site, a site identified as a proposed open space in the Plan, a part of the Master Plan, or, with the approval of the City Planning Commission, could be located off-site on public or private property in a location within the same use district, or within 500 feet of the use district (see Plan, p. 60).
- TDR	Where the development site and the open space site are in the same C-3 use district, or the development site is in the C-3-0 (SD) district and the open space site is in a C-3 use district, and the open space is privately owned, and the development on the development site would not result in the demolition or substantial alteration of an architecturally significant or contributory building or landmark, the development rights from the open space could be transferred to the development site (see Plan, p. 60).

TABLE III.1: SUMMARY OF DOWNTOWN PLAN (Continued)

2.	Art Works	The Plan would require that one percent of the total construction cost of a new development project be invested in art works (see Plan, p. 108).
3.	Streetscape	The streetscape policies of the Plan (see Plan, pp. 106, 107) would be applied through a design review process (see Plan, p. 109). The recommended policies include the following: - building structures to the street property line along the entire frontage to a sufficient height for proper definition of street space; - providing setbacks above a building base to maintain the continuity of the predominant streetwalls along the street; - maintaining and enhancing the traditional downtown street pattern of projecting cornices on smaller buildings and projecting belt courses on taller buildings; - devoting ground floor space to retail and service uses that are of interest to pedestrians and that meet the needs of workers and visitors to nearby buildings (d); - using clear, untinted glass on the first two or three floors of buildings; - incorporating visually interesting details and ornamentation into the design of bases of buildings; and, - using intensity patterns and scale-giving features in any blank walls.
4.	Transportation and Circulation	The transportation-related recommendations of the Plan include the following (see Plan, pp. 126, 127, 130, 135-137, 141 and 143) (e): - constructing Muni Metro turnaround at the Embarcadero; - constructing Muni Metro extension to SP/Caltrain terminal at Fourth and Townsend Streets; - examining alternatives for Muni Metro service along Geary/Third Street; - carrying out plans for expanding transit service; - moderating curbside on-street boarding of Golden Gate Transit and Samtrans vehicles; - refine proposals and implement the Muni "E" and "F" streetcar lines (see Plan, p. 132); - restricting new long-term parking facilities to the periphery of downtown; - building new long-term parking garages only as needed to replace the loss of long-term parking in the downtown core; - requiring transportation brokers to be employed for each major new development or by groups of smaller projects; - controlling growth and routes of downtown traffic circulation; - installing and improving transit lanes on downtown streets; - developing shuttle transit systems to supplement trunk lines; - revising off-street freight loading and service vehicle space requirements (see Plan, p. 136); - establishing requirements for tour bus loading (see Plan, p. 137); - establishing clear zone legislation (see Plan, p. 141); and, - implementing street improvement projects recommended for downtown streets and alleys (see Plan, p. 124).

TABLE III.1: SUMMARY OF DOWNTOWN PLAN (Continued)

NOTES

(a) As recommended in the Downtown Plan (pp. 29 and 105), FARs shown in Table III.1 reflect the following revisions to the present (Planning Code) method for calculating gross floor area:

- In the C-3-0 and C-3-0 (SD) districts, the following ground floor uses and functions would be excluded from calculations of gross floor area: retail (worker-serving), building circulation; open space features; pedestrian circulation; cultural, recreational and educational facilities available to the general public; and building service; and,

- gross floor area would be measured from the average line of window glass, except that one-third of the floor area of a bay window extending beyond the exterior plane of the facade would not be counted as gross floor area.

(b) In the C-3-0 (SD) use district, The Downtown Plan erroneously appears to link the recommended basic FAR of 7:1 (see Plan, p. 27) with the exclusion of ground floor uses from the FAR calculation (see Plan, p. 29 and Note (a), above). This would have the effect of increasing the base FAR over that which presently exists. Therefore, an erratum to the Plan was released by the Department of City Planning on October 24, 1983 correcting the last two sentences of the first paragraph in the right column of p. 27 to read: "The district's base FAR could be increased to the height and bulk limits with Transferable Development Rights. Except for the difference in base FAR, the district will have all the attributes of the C-3-0 district. The base FAR would be 6:1, but the ground floor uses which are to be excluded from the FAR calculation in the C-3-0 (see Plan, p. 29) would be excluded here as well. Thus, the effective base FAR would be equivalent to the existing 7:1."

(c) See Plan, p. 54, for proposed open space guidelines.

(d) Ground floor uses in the C-3-0 and C-3-0 (SD) use districts would be limited to those identified in Note (a), above (see Plan, p. 29). Ground floor retail uses would be required in the C-3-R, C-3-G and C-3-S use districts (see Plan, pp. 32, 35 and 36).

(e) The Plan endorses a number of transportation-related recommendations that would generally be outside the charter of the City to effectuate unilaterally. These recommendations appear throughout the Plan in pages 118-143. The emphasis of the summary of transportation-related measures presented in Table III.1 is upon those measures that could be implemented directly through provisions of the Planning Code and by actions of the City Planning Commission and/or Board of Supervisors. Additionally, the Plan calls for the following actions involving other jurisdictions: (1) extending BART to San Francisco Airport; (2) initiating studies on potential for light rail (Metro) rapid transit to Marin County; (3) evaluating possible extension of SP/Caltrain service; (4) implementing discount Muni transfer with all suburban corridor lines; (5) improving and expanding the Transbay Terminal; (6) initiating feasibility studies for additional public or private ferry service; (7) tearing down the Embarcadero freeway and reconstructing it as a surface roadway; (8) reconstructing the stub-end of I-280; and (9) providing high-occupancy vehicle lanes on freeways and their on-ramps.

SOURCE: Environmental Science Associates, Inc.

TABLE III.2: USES PERMITTED IN C-3 USE DISTRICTS AS PROPOSED IN DOWNTOWN PLAN (a)

Planning Code Reference Section(s)(b)	Summary Description of Major Uses Permitted(b)	Proposed C-3 Use Districts (c)				
		C-3-O	C-3-O(SD)	C-3-R	C-3-G(d)	C-3-S(e)
	RESIDENTIAL USES					
209.1(a)-(m), 215(a) and (b).	Dwelling (with restrictions on density and/or no. of units)	P	P	P	P(f)	C(g)
209.2, 216.	Group Housing (with restrictions on density and/or no. of units)	P	P	P	P	C
209.2(a) and (b), 216(a).	General (including Residential Hotel)	P	P	P	P	C
209.2(c), 216(a).	Medical and Educational	P	P	P	P	C
	Transient Hotels					
209.2(d), 216(b).	5 rooms or fewer	P	P	P	P	P
209.2(e), 216(b).	6 rooms or more	P	P	P/C(h)	P	P
216(c) and (d).	Motels	N	N	N	P	P
	INSTITUTIONAL USES					
209.3(a), 217(a).	Hospitals	C	C	C	C	C
	Residential and Child Care Facilities					
209.3(b) and (e), 217(b) and (c).	6 or fewer patients/12 or fewer children	P	P	P	P	C
209.3(c) and (f), 217(b) and (c).	7 or more patients/13 or more children	P	P	P	P	C
209.3 (g)-(j), 217(f)-(j).	Schools and Churches	P	P	P	P	P
209.4(a) and (b), 221(a)-(f).	Community Facilities, Halls and Theaters	P	P	P	P	P
	RETAIL SALES AND PERSONAL SERVICES					
209.8(a) and (c), 218(a) and (b).	Ground floor or below (with restrictions)	P(i)	P(i)	P(j)	P(k)	P(l)
209.8(b) and (d), 218(a) and (b).	Above ground floor (with restrictions)	P	P	P	P	P

TABLE III.2: USES PERMITTED IN C-3 USE DISTRICTS AS PROPOSED IN DOWNTOWN PLAN (Continued)

Planning Code Reference Section(s)	Summary Description of Major Uses Permitted	Proposed C-3 Use Districts				
		C-3-0	C-3-O(SD)	C-3-R	C-3-G	C-3-S
209.8(a)-(d), 219.	OFFICES (Professional and Business)	P	P	P/C(m)	P	P
226(a).	LIGHT MANUFACTURING (with restrictions and exeptions)	P	P	P	P	P
	PARKING					
209.7(a) and (c), 223.8	Parking Lot, privately owned	C	C	C	C	P
209.7(a) and (c), 223(m) and (n).	Parking garage, privately owned, completely enclosed	C	C	C	C	C

(a) The explicit or inferred status of each use listed in the Table, for each use district shown, is indicated by the following symbols: "P" = Principally Permitted Use; "C" = Conditionally Permitted Use; "N" = Use Not Permitted.

(b) See Planning Code Reference Section(s) in left column of Table for complete descriptions of major uses. See also Planning Code for complete descriptions of other uses not listed in Table, as follows: Sec. 209.5, Open Recreation and Horticulture; Sec. 209.b, Public Facilities and Utilities; Sec. 209.7, Vehicle Storage and Access; 209.9 and 227, Other Uses; Sec. 220, Laundering, Cleaning and Pressing; Sec. 221, Assembly and Entertainment; Sec. 222, Home and Business Services; Sec. 223, Automotive; Sec. 224, Animal Services; Sec. 225, Wholesaling, Storage, Distribution and Open-Air Handling of Materials and Equipment; Sec. 226, Manufacturing and Processing.

(c) Use districts are described as follows:

(1) C-3-0: Downtown Office District (see Planning Code, hereinafter, Code, Section 210.3, p. 104)
(2) C-3-0 (SD): Downtown Office District (Special Development). Except for a basic FAR of 7:1 instead of 10:1, this district will have all the use attributes of the C-3-0 district (see Plan, p. 27)
(3) C-3-R: Downtown Retail (see Note (b)(1), above)
(4) C-3-G: Downtown General Commercial (see Code, p. 104)
(5) C-3-S: Downtown Support (see Code, p. 104)

TABLE III.2: USES PERMITTED IN C-3 USE DISTRICTS AS PROPOSED IN DOWNTOWN PLAN (Continued)

(d) Conversions from residential use would be permitted by conditional use only (see Plan, p. 35).

(e) Conversions from residential use would be permitted by conditional use only (see Plan, p. 36).

(f) Residential uses in excess of basic allowable floor area would be permitted as conditional use up to height and bulk limits (see Plan, pp. 33 and 40).

(g) Residential uses in excess of basic allowable floor area would be permitted as conditional use up to height and bulk limits (see Plan, pp. 36 and 40).

(h) Hotels of 200 rooms or more would be permitted as conditional use; hotels of less than 200 rooms would be permitted as of right (see Plan, p. 32).

(i) Retail uses would be required on ground floor (see Plan, p. 29).

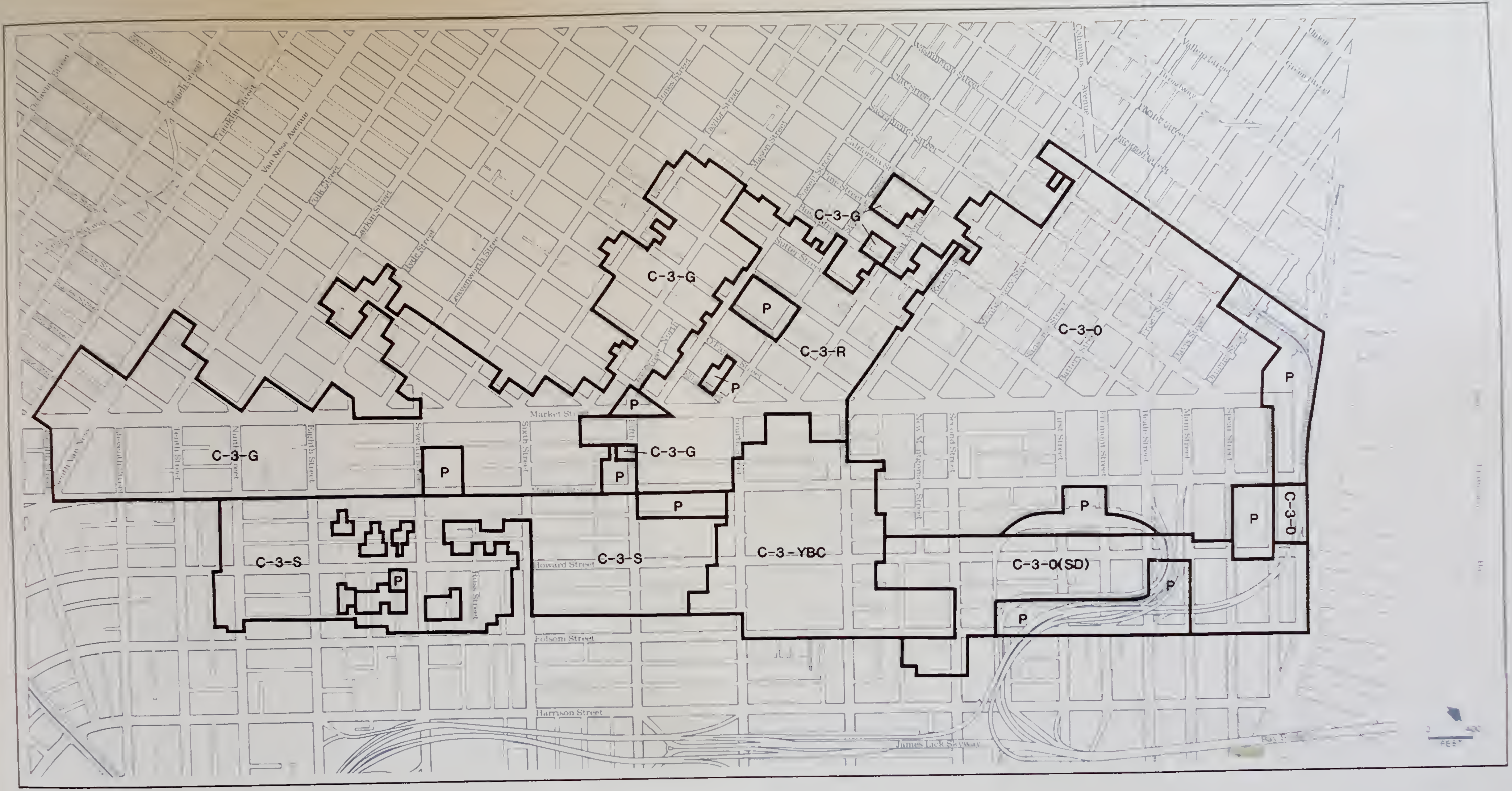
(j) Retail uses would be required on ground floor (see Plan, p. 32).

(k) Retail uses would be required on ground floor (see Plan, p. 35).

(l) Retail uses would be required on ground floor (see Plan, p. 36).

(m) Office uses in excess of 10,000 square feet would be permitted as conditional use; office uses of 10,000 square feet or less would be permitted as of right (see Plan, p. 32).

SOURCE: Environmental Science Associates, Inc.



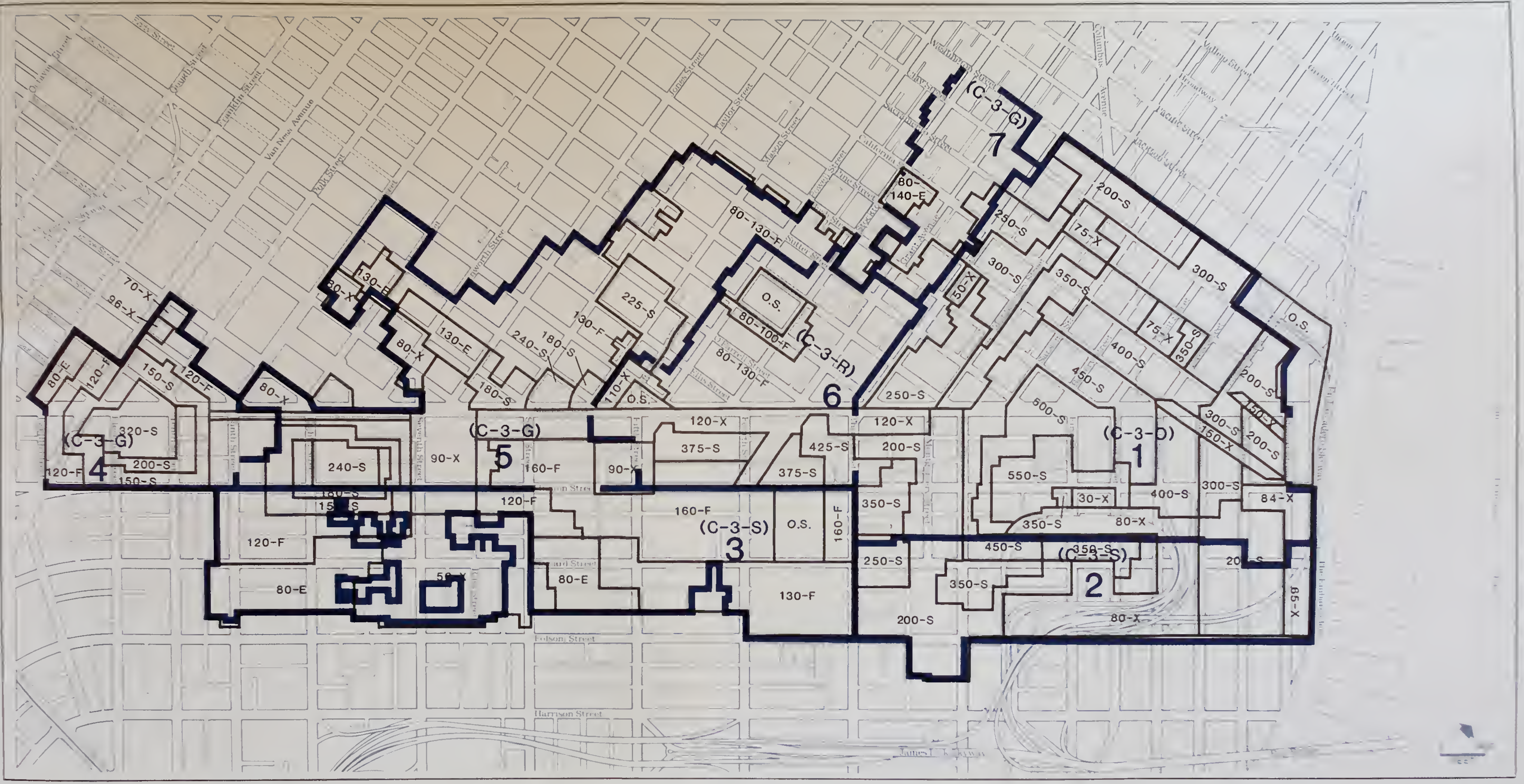
C-3-O	DOWNTOWN OFFICE DISTRICT
C-3-O(SD)	DOWNTOWN OFFICE DISTRICT (SPECIAL DEVELOPMENT)
C-3-R	DOWNTOWN RETAIL DISTRICT
C-3-G	DOWNTOWN GENERAL COMMERCIAL DISTRICT
C-3-S	DOWNTOWN SUPPORT COMMERCIAL DISTRICT

NOTES: See Table III.2 for explanation of use district symbols.

Study subareas and existing use districts shown in blue.

FIGURE III.1:
DOWNTOWN PLAN USE DISTRICTS

SOURCE: Downtown Plan and Environmental Science Associates, Inc.



BULK LIMITS	DISTRICT SYMBOL ON MAP	HEIGHT ABOVE WHICH MAXIMUM DIMENSIONS APPLY (in feet)	MAXIMUM PLAN DIMENSIONS (in feet) LENGTH	DIAGONAL DIMENSION
	E	65	110	140
	F	80	110	140
	S	See Table III 1, Part 1, and Downtown Plan, pages 92 96, for explanation of bulk limits in bulk district S		
	OS	Open Space; see Planning Code Section 290		
	/	This table not applicable. See Planning Code Section 260(a)3		

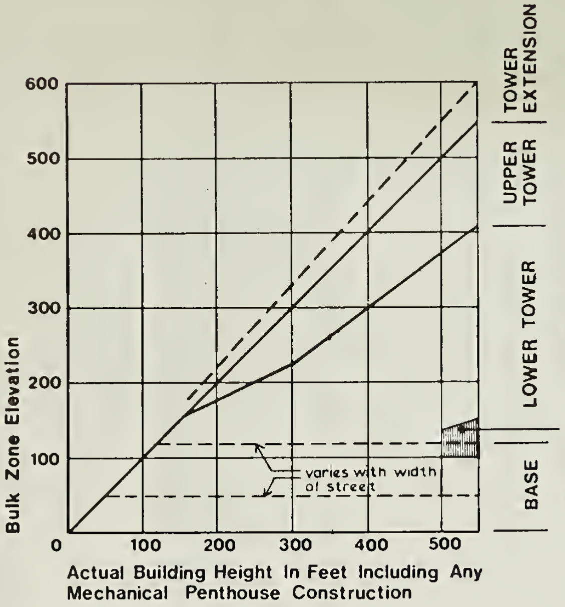
HEIGHT LIMITS Shown on map in feet.

NOTE Study subareas and existing use districts are shown in blue

FIGURE III.2:
DOWNTOWN PLAN
HEIGHT AND BULK DISTRICTS

SOURCE Downtown Plan and Environmental Science Associates, Inc.

CHART A
BULK ZONES AND LIMITS



Mechanical/Sculptural/Recreational Extension option
(see Plan, p. 94, and Chart B)

Max. Plan Width 140 ft.
Max. Average Diagonal 160 ft.
Max. Average floor area 12,000 sq. ft.
Max. floor area 17,000 sq. ft.
Volume reduction as determined by bulk control Chart B

Max. Average floor area 20,000 sq. ft.
Max. Plan Width 160 ft.
Max. Average Diagonal 200 ft.
(see Downtown Plan, p. 92, for exception)

(see Downtown Plan, p. 92, for exceptions on buildings over 500 ft. in height)

Height of Base Zone may not exceed 1.25 times the width of abutting street, except in no case shall the base zone be limited to less than 50 ft.
No area or plan restrictions
No maximum floor area

CHART C
SEPARATION BETWEEN TOWERS
On Interior Property Lines

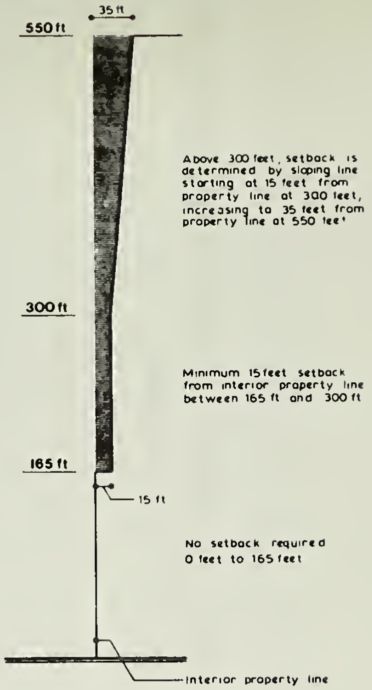

35 ft
550 ft
300 ft
165 ft
15 ft
Above 300 feet, setback is determined by sloping line starting at 15 feet from property line at 300 feet, increasing to 35 feet from property line at 550 feet
Minimum 15 feet setback from interior property line between 165 ft and 300 ft
No setback required 0 feet to 165 feet
Interior property line

CHART B
UPPER TOWER VOLUME REDUCTION

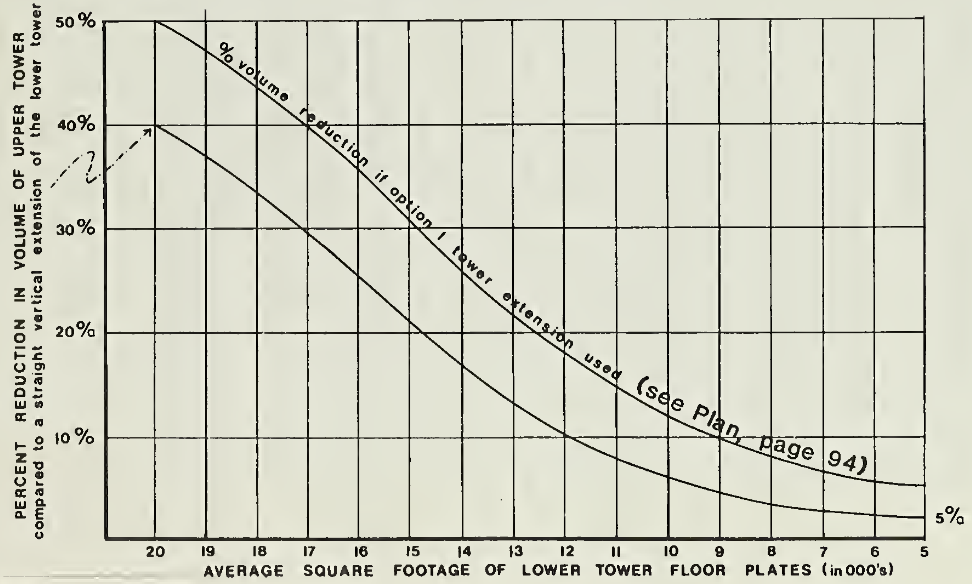


FIGURE III.3:

DOWNTOWN PLAN BULK CONTROL CHARTS A, B AND C

SOURCE: Downtown Plan and Environmental Science Associates, Inc.

REQUIRED APPROVALS

The Downtown Plan would be subject to review and adoption by the City Planning Commission as an element of the Master Plan. Under the Charter of the City and County of San Francisco (Sections 3.524 and 3.525), the Planning Commission has exclusive authority to adopt, maintain and amend the Master Plan.

After adopting the Downtown Plan, the City Planning Commission would recommend to the Board of Supervisors any amendments to the Planning Code that would be required in order to implement The Downtown Plan. As the legislative body for the City, the Board of Supervisors has exclusive authority to adopt amendments to the Planning Code. The Board may adopt amendments to the code after a noticed public hearing before its Planning, Housing and Development Committee and two readings of the proposed amendments before the full Board. Amendments adopted by the Board would be referred to the Mayor for approval.

The Downtown Plan contains the following transportation policies that would require multi-jurisdictional approval in order for them to be implemented: improve the San Francisco Muni transit system, extend BART to the San Francisco airport, extend Caltrain into downtown San Francisco, study potential light rail rapid transit to Marin, establish exclusive high occupancy vehicle (HOV) lanes, implement discount Muni transfers with all suburban corridor transit lines, improve and expand the Transbay Terminal, tear down The Embarcadero freeway and rebuild the surface roadway, reconstruct the I-280 stub end, and provide more Caltrans carpool/vanpool parking lots. Each of these actions may require approval from public entities such as the Federal Highway Administration (FHWA), the Urban Mass Transportation Administration (UMTA); Caltrans; State of California Legislature; Bay Area Rapid Transit District (BART); Metropolitan Transportation Commission (MTC); Golden Gate Bridge, Highway and Transportation District; San Mateo County Transit District (SamTrans); San Francisco Public Utilities Commission (PUC); and from legislative bodies of local communities such as the San Francisco Board of Supervisors.

NOTE - Description of the Downtown Plan

/1/ The Downtown Plan is available from the Department of City Planning, 450 McAllister Street, San Francisco, and is hereby incorporated by reference into this EIR.

IV. ENVIRONMENTAL SETTING AND IMPACTS OF THE DOWNTOWN PLAN

A. LOCAL AND REGIONAL PLANS AND POLICIES

SETTING

Growth Management Alternatives for Downtown San Francisco: Downtown EIR Consultant's Report contains a description of the San Francisco Master Plan and also regional plans on pages IV.A.1-21 which is incorporated herein by reference. Pertinent sections are summarized below.

San Francisco Master Plan

The elements of the Master Plan are identified as Commerce and Industry, Transportation, Residence (Housing), Urban Design, Recreation and Open Space, Environmental Protection, and Community Safety. Special area plans have also been adopted. One of these — The Northeastern Waterfront Plan — pertains to a portion of the C-3 Use District (Downtown Study Area).

Each element of the Master Plan contains statements of goals, objectives, and policies which represent the current official, broad and general recommendations of the City Planning Commission for the development of the City in accordance with present and future needs. In this Section, those aspects of the Master Plan which pertain specifically to the Downtown Study Area, or relate directly to aspects of the Downtown Plan, are identified and described.

Land Use Element

The Land Use Element contains a Citywide Land Use Plan, objectives, principles, and standards, and a map depicting the Plan. The plan was adopted on January 29, 1953 and amended on April 10, 1958. The section pertaining to residential density standards has been updated by the Residence element as first adopted in April 1971.

The Plan describes working areas, in part, as follows: "Except in a few isolated instances the entire range of commercial and industrial activities of citywide importance is confined to the eastern flank of the city between the Bay and the first tier of hills rising west of the Bay. The downtown district is shown as extending south of Market Street to Stevenson or Jessie Street. "Surrounding this district on three sides is the primary area devoted to and designated for Business and Services. These are businesses and uses which supplement and are necessary to the total economy of the downtown area."

Commerce and Industry Element

This element was adopted by the City Planning Commission in 1978./1/ It "sets forth objectives and policies that address the broad range of economic activities, facilities and support systems that constitute San Francisco's employment service base". The plan is framed within three overriding goals which call for continued economic vitality, social equity and environmental quality. These goals "call for managing economic growth and change to ensure enhancement of the total city environment, maintaining a sound and diverse economic base and fiscal structure, and providing expanded employment opportunities for city residents, particularly those that are unemployed." Specific objectives pertain to major economic sectors within San Francisco which include manufacturing and industry, maritime activities, and neighborhood commercial retailing. Specific objectives most pertinent to the Downtown Study Area pertain to office/administrative services, specialized regional retail trade, government services, and visitor trade.

Objective 7 of the Commerce and Industry element pertains to the Downtown Retail sector as follows: "Improve Downtown San Francisco's position as a prime regional location for specialized retail trade. The general narrative states that: "The retail core, generally bounded by Powell, Sutter, Kearny and Market, has retained and enhances its position as the center for specialized comparison retail shopping within the Bay Area." Reasons cited for San Francisco being less susceptible to competition from outlying regional shopping centers than most downtown retail centers in other cities include: a large number of specialized and attractive shops, proximity of a relatively affluent work-day population, high usage by San Francisco residents, accessibility via an extensive regional and citywide transit system, and the nearby location of large hotels, restaurants and other establishments serving a large visitor population." The objective states that: "This combination of factors must be maintained and improved if San Francisco is to keep its downtown retail center prosperous. Growth that is compatible with existing uses while reinforcing the function of the retail sector should be encouraged.

Objective 9 of the Commerce and Industry Element would: "Enhance San Francisco's position as a national and regional center for governmental, health, and educational services." Policy 1 would: "Promote San Francisco, particularly the Civic Center, as a location for local, regional, state and federal government functions." Although the Civic Center is not in the Downtown Study Area, it is surrounded by the Study Area on three sides. The plans would insure provision of an adequate amount of space in the Civic Center to service governmental activities without endangering surrounding residential areas.

Objective 10 would: "Enhance San Francisco's position as a national center for conventions and visitor trade." The plan states: "The city should encourage additional visitor-oriented facilities to locate in those areas where visitor attractions and business and convention facilities are at the present time primarily concentrated." Except for the Fisherman's Wharf area, most of these activities are located in the Downtown Study Area and the adjacent Nob Hill area.

The Commerce and Industry Element contains no maps or diagrammed plans.

Transportation Element

This element of the Master Plan was adopted in its present form in 1972, and amended in 1977 and 1982./2/ Of the six sections of the Plan for Transportation, as the element is called, three are pertinent to the Downtown Study Area. These are the Mass Transit Plan, the Vehicle Circulation Plan, and the Downtown Transportation Plan. Each section consists of objectives and policies and related maps which describe key physical aspects of each plan. The Downtown Transportation Plan singles out the downtown area because of the unique problems associated with travel to, from, and within the "most important travel destination in the Bay Area."

The Transportation Element is based on several stated assumptions. One of these is that a desirable living environment and a prosperous business environment cannot be maintained if traffic levels continue to increase without limits. Various methods are suggested to control and reshape the impact of automobiles on the City and to use other means of transportation to improve the environment. The Plan for Transportation notes that continuing growth in employment in San Francisco is anticipated to result in a continuing growth in commuter travel to the City. An assumption of the Plan "is that, until an optimum employment level is determined, the City should assess each new transportation project on the basis of the ability of the transportation system to accommodate additional commuter travel and the impact on the quality of San Francisco's environment. To this end, the Plan assumes that all additions to the commuter load as a result of job growth in the City should be accommodated by public transit." It further states that "increased transit use is required to alleviate the congestion and undesirable side-effects of commuter travel through the City's neighborhoods."

The general objectives of the Plan are to: 1) "Meet the needs of all residents and visitors for safe, convenient and inexpensive travel within San Francisco and between the City and other parts of the region;" and 2) "Use the transportation system as a means for guiding development and improving the environment."

The Vehicle Circulation Plan recommends that the elevated portion of the Embarcadero Freeway between Howard Street and Broadway, as well as the Washington-Clay and Broadway ramps, be removed as soon as possible;/3/ that the Doyle Drive approach to the Golden Gate Bridge be improved for greater safety; that most east-west travel in the Western Addition and Inner Richmond be channeled onto Geary Boulevard and that when the Richmond rapid transit line is built, the capacity of the Pine Street-Bush Street couplet be reduced west of Van Ness Avenue. No new freeways are recommended.

The Downtown Transportation Plan is concerned primarily with the need for proper circulation within downtown for vehicles and pedestrians and with the organization of transit terminals and parking facilities which form part of the downtown-oriented segments of the transportation system. The Plan states that the density of daytime population downtown and the resulting number of trips require that the movement of people take place in the most efficient and least space-consuming modes of transportation, such as public transit, and that automobile use should be controlled. "Every effort must be made to insure that better transit service is provided in order that transit increasingly becomes the mode for work and nonwork trips to and within the district. Regional policy and regional transportation funding should recognize San Francisco's unique transportation needs in sustaining its competitive business position as the primary financial and administrative center for the region."

The Plan for Residence (Housing Element)

The Plan for Residence was adopted in its present format in 1971 and amended in 1975, 1980, 1981 and 1983./4/ The Residence element, in its introduction, declares: "The City faces an extraordinary housing situation. Costs are among the highest in the nation. The vacancy rate remains persistently low. The growth of jobs and the desire of people . . . to live in San Francisco place added pressure on the city's housing stock." The element notes that the supply of affordable housing, however, is not expanding rapidly enough to match demand. The element states that "the city can assure that sufficient sites exist for housing at locations acceptable to the public; provide land use incentives for the production of housing; assist, to a limited extent, in the financing of housing; and can establish a favorable regulatory climate for new housing construction." Finally, the Residence element recognizes that housing is a regional concern.

The Residence element would implement its stated objectives in a number of ways, to the extent that City controls and actions could influence the provision of housing. One way is the rezoning of underused commercial areas for mixed use or predominantly residential use. Two areas within the Downtown Study Area are cited: the South-of-Market district west of Yerba Buena Center, and the North-of-Market (Tenderloin) district./5/

The Urban Design Plan

This element of the Master Plan was adopted in 1971./6/ The Plan notes in its description of purpose that "San Francisco's environment is magnificent, but the unique relationships of natural setting and man's past creations are extremely fragile." The Urban Design Plan is concerned both with development and with preservation.

The Urban Design Plan contains enunciated guidelines and has resulted in the development of more expanded or refined guidelines which are used by the Department of City Planning in the design review of major projects. The Plan states that: "The people of San Francisco have taken a leadership role among the citizens of the country in balancing conservation and change through new safeguards for cherished attributes of their city's character. This Plan is intended to reflect the people's needs and to consolidate future efforts to protect and improve the physical makeup of the city. As new needs and concerns arise in later years, this Plan will be added to and revised in the continuing process of comprehensive planning."

The Plan sets forth principles for major new development, some of which are pertinent to the Downtown Study Area. Among these, principle 1 states that "the relationship of a building's size and shape to its visibility in the cityscape, to important natural features and to existing development determines whether it will have a pleasing or a disruptive effect on the image and character of the city." It points out that "massive buildings on or near hills can overwhelm the natural land forms, block views, and generally disrupt the character of the city." It notes that "low buildings along the waterfront contribute to the gradual tapering of height from hilltops to water that is characteristic of San Francisco."

Principle 2 points out that "tall buildings on slopes of hills severely restrict views from above." Principal 15 points out that "plazas or parks located in the shadows cast by large buildings are unpleasant for the user," and "the height and mass of tall, closely packed buildings can be shaped to permit sunlight to reach open spaces."

Many of the Policies for Major New Development are pertinent to the Downtown Study Area. The narrative of Policy 4 notes that new buildings should not block significant views of public open spaces, including the Bay, and that buildings to the south, east, and west of parks and plazas should be limited in height or effectively oriented so as not to prevent the penetration of sunlight to such parks and plazas. The Plan expresses ranges of height to be used as an urban design evaluation for establishment of specific height limits. Similarly the Plan contains a map showing guidelines for the bulk of buildings./7/

The Urban Design Plan expresses the need to recognize the special urban design problems of development of large properties.

The Plan for Recreation and Open Space

The Recreation and Open Space element was adopted in 1973./8/ Its objectives and policies pertain to the Bay Region, the San Francisco Shoreline, the Citywide System, and Neighborhoods. In the latter category, it contains one policy pertinent to the Downtown Study Area. This policy would: "give high priority for recreation improvements to high need neighborhoods." Both the North-of-Market and the South-of-Market (Study Areas 3 and 5) are identified as high-need neighborhoods. Plans for public improvements in those areas have been prepared and programmed for implementation.

Environmental Protection Element

This element of the Master Plan consists of three parts. The first is the Plan for Conservation which was adopted in 1973./9/ Policy 3 of the Air Objective would: "Encourage greater use of mass transit in the downtown area and restrict the use of motor vehicles where such use would impair air quality."

The second is the Plan for Transportation Noise Control which was adopted in 1974./10/ This Plan includes all of the Downtown Study Area in that part of the City which has the highest background noise levels, as measured in 1974. In most of the Study Area, new uses would require a detailed analysis of noise reduction requirements and inclusion of noise reduction features in the project design.

The third is the Energy Policy component which was adopted in June 1982./11/ Objective 3, pertaining to commercial uses, would: "Promote effective energy management practices to maintain the economic vitality of commerce and industry." The narrative states: "The commercial sector is the fastest growing energy use sector in San Francisco. Commercial buildings consume over half of the electricity and over a quarter of the natural gas supplied to the city. Within this sector, electrical demand has been growing at rates double the growth of total city demand. The current boom in new office construction will further increase commercial energy use. Energy conservation in commercial buildings, therefore, represents an important citywide objective."

Objective 4 would "increase the energy efficiency of transportation and encourage land use patterns and methods of transportation which use less energy."

Community Safety Element

This element was adopted in 1974 /12/ and is concerned with life safety, preservation, emergency operations, and reconstruction in relation to earthquakes. It notes that the Downtown Study Area has an estimated intensity of future ground shaking ranging from strong through very strong to violent. It notes that the portion of the Study Area generally east of Third and Kearny Streets is a potential liquefaction hazard area and a subsidence area. Portions of the South-of-Market district are also in this category. Both are classified as special geologic study areas.

Objective 1, Policy 1 calls for "apply(ing) a minimum level of acceptable risk to structures and uses of land based upon the nature of the use, importance of the use to public safety and welfare, and density of occupancy." Objective 2, Policy 1 calls for "preserv(ing) the architectural design character of buildings and structures subject to requirements for abatement of hazards to life safety."

The Northeastern Waterfront Plan

The Northeastern Waterfront Plan was adopted in 1977 /13/ as a guide to the development of that portion of the San Francisco Waterfront situated between Fisherman's Wharf and China Basin. Although pertaining primarily to the public area along the waterfront, it contains an objective "To develop limited additional office and commercial space in order to serve the City's economic needs and to encourage a mixture of uses and activities along the northeastern waterfront."

Policy 1 would: "Permit additional office space development adjacent to the Downtown Office District which compliments the downtown but which is of a lesser intensity and which reflects the transition between the City and the water." It would limit general and specialty retail uses, in combination with other uses, to those which would not significantly detract from the Downtown Retail District. It would encourage limited additional Bay-oriented commercial recreation and public assembly uses inland of the seawall.

The plan contains proposed height and bulk districts which differ slightly from those now in effect, changing open space areas to an OS classification, reducing the Ferry Building and the block bounded by Howard, Stewart and Folsom Streets and The Embarcadero from an 84-ft. to a 40-ft. height district.

Conclusion

Those aspects of the San Francisco Master Plan that pertain to or affect the Downtown Study Area are described above. As comprehensive planning is a continuing process, the Master Plan and its various elements serve as a basis for specific public design plans, for implementation of the plan, and for the public review of privately sponsored project plans, for regulatory proposals for modifications to meet changing needs or perceptions of need.

The Downtown Plan brings together all aspects of the Master Plan as they pertain to the downtown area and elaborates on detailed issues specific to the downtown area. Like other special area plans — the Northeastern Waterfront Plan, for example — it focuses on the downtown area as a special physical entity, with special problems and unique opportunities.

Regional Plans

A variety of plans have been prepared by regional agencies which, though broader in scale, are pertinent to Downtown San Francisco. Most important of the plans in this category is the Regional Plan 1980 prepared by the Association of Bay Area Governments (ABAG)./14/ The Regional Plan projects the economic base of the region, and contains plans for its physical resources, transportation, the natural environment — including air quality, water quality, and waste management — and subarea plans. The Regional Plan incorporates plans prepared by special-purpose agencies such as the Regional Transportation Plan prepared by the Metropolitan Transportation Commission (MTC), and the Air Quality Plan prepared jointly by the Bay Area Air Quality Management District (BAAQMD), MTC, and ABAG.

The Regional Plan is a city-centered plan which emphasizes the use of public transit to link the regional centers and subcenters. Concerning San Francisco, the plan notes that it has "housing, public facilities, and social service needs which by far exceed those of neighboring jurisdictions. Its ability to meet these needs may be diminished by the suburbanization of economic growth. Accordingly, San Francisco supports the diversification of its economic base by encouraging development in sectors where it holds a competitive advantage (finance, commerce, services, tourism)."

In addition to ABAG and the special purpose agency plans mentioned above, the San Francisco Bay Conservation and Development Commission is responsible for the San Francisco Bay Plan as amended, which pertains to the area under its jurisdiction — the Bay and its shoreline./15/ The portion of the shoreline adjacent to the Downtown Study Area was included in a multi-agency special study of the San Francisco waterfront. The plan which evolved from that study is contained in the Northeastern Waterfront Plan of the San Francisco Master Plan.

The plans of the regional transit providers are covered in the Transportation and Circulation Section of this report.

IMPACTS

San Francisco Master Plan

The Downtown Plan contains objectives, policies and implementing actions for downtown San Francisco, and is proposed to become a part of the San Francisco Master Plan. As such, objectives and policies of the proposed Downtown Plan and the Master Plan are related, although the objectives, policies and implementing actions of the Downtown Plan are specific to the downtown. General objectives and policies of the Master Plan, and elements not contained within the Downtown Plan, further define planning in San Francisco and the region.

Aspects of the San Francisco Master Plan that pertain to or affect the downtown are compared to objectives and policies of the Downtown Plan in Table IV.A.1. As the Downtown Plan does not contain specific objectives, policies or implementing actions concerning energy, air quality or noise impacts, discussions of these impacts of the Downtown Plan in relation to policies of the Master Plan are presented in the corresponding impact sections of this EIR.

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN

MASTER PLAN	DOWNTOWN PLAN
Commerce and Industry Element:	
1. Objective 6 - "Maintain and improve San Francisco's position as a prime location for financial, administrative, corporate, and professional activity."	Space for Commerce Objective - Same.
2. Objective 6, Policy 1 - "Encourage continued growth of prime downtown office activities so long as undesirable consequences of such growth can be avoided."	Space for Commerce Policy - "Encourage prime downtown office activities to grow as long as undesirable consequences of such growth can be controlled."
3. Objective 6, Policy 2 - "Guide location of office development to maintain a compact downtown core so as to minimize displacement of other viable uses."	Space for Commerce Policy - "Guide location of office development to maintain a compact downtown core and minimize displacement of other uses."

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN (Continued)

	MASTER PLAN	DOWNTOWN PLAN
4.	Objective 6, Policy 3 - "Assure that downtown development is compatible with the design and character of San Francisco."	Urban form Policy - "Assure that new buildings contribute to the visual unity of the City."
5.	Objective 6, Policy 4 - "Provide adequate amenities for those who live, work and use downtown."	See items 6, 9, 10, 17, 21, 26, 30, 31, 46, 47, 48, 49, 51, 56, and 57.
6.	Objective 6, Policy 5 - "Control traffic and congestion in the downtown area, particularly from private automobiles."	Auto Circulation Policy - "Organize and control traffic circulation to reduce congestion in the core caused by through traffic and to channel vehicles into peripheral parking facilities."
7.	Objective 7 - "Improve Downtown San Francisco's position as a prime regional location for specialized retail trade."	Space for Commerce Objective - "Improve Downtown San Francisco's position as the region's prime location for specialized retail trade."
8.	Objective 7, Policy 1 - "Assure a strong interrelationship occurs between downtown specialty shopping, cultural entertainment, and visitor accommodation activities."	Text from Space for Commerce Policy - "Hotels and other visitor-oriented uses naturally tend to locate in geographical proximity to one another just as other sectors of the economy. Proximity to other hotels, restaurants, convention facilities, business appointments, sightseeing interests, other retail, and entertainment enhances visitor appeal."
9.	Objective 7, Policy 2 - "Support the continued strength of high quality, specialty retail shopping facilities in the retail core."	Space for Commerce Policy - "Maintain higher quality, specialty retail shopping facilities in the retail core."
10.	Objective 7, Policy 3 - "Encourage shopper accessibility to the downtown area and physical design amenities at a pedestrian scale which will enhance the pedestrian climate."	Space for Commerce, text from item 9, above - "Circulation within the area, and awareness of physical design amenities should be observed in promoting development of the downtown retail sector." (See also items 24, 25 and 50.)

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN (Continued)

MASTER PLAN	DOWNTOWN PLAN
11. Objective 10 - "Enhance San Francisco's position as a national center for conventions and visitor trade."	Space for Commerce Objective - "Enhance San Francisco's role as a tourist and visitor center."
12. Objective 10, Policy 1 - "Guide the location of additional tourist-related activities to minimize their adverse impacts on existing residential, commercial, and industrial activities."	Space for Commerce Policy - "Guide the location of new hotels to minimize their adverse impacts on circulation, existing uses, and scale of development."
Transportation Element:	
13. Mass Transit Objective 1 - "Give first priority to improving transit service throughout the City, providing a convenient and efficient system as a feasible alternative to automobile use."	Transit Lanes Policy - "Improve speed of transit travel and service by giving priority to transit vehicles where conflicts with auto traffic occur, and by establishing a transit preferential street system."
14. Mass Transit Objective 2 - "Develop transit as the primary mode of travel to and from downtown and all major activity centers within the region."	Moving To and From Downtown Objective - "Develop transit as the primary method of travel to and from downtown."
15. Objective 2, Policy 1 - "Build and maintain rapid transit lines from downtown to all suburban corridors and major centers of activity in San Francisco."	Rapid Transit Lines Policy - Same.
16. Objective 2, Policy 2 - "Where significant transit service is provided by buses, bridges and freeways should have exclusive bus lanes."	Transit Lanes Policy - "Establish exclusive transit lanes on bridges, freeways and city streets where significant transit service exists."
17. Downtown Transportation Plan, Objective 1 - "Maintain the type and level of transportation services appropriate to enhance the economic vitality of the downtown business and shopping district."	Moving About Downtown Objective - "Provide the type and level of transportation services needed to maintain the economic vitality of the downtown businesses and shopping districts."

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN (Continued)

	MASTER PLAN	DOWNTOWN PLAN
18.	Objective 1, Policy 1 - "Encourage short-term use of existing parking facilities within and adjacent to the downtown core by converting all day commuter parking to short-term parking in areas of high demand or to car/van pool parking where short-term parking demands are low."	Short-Term Parking Policy - Same.
19.	Objective 1, Policy 2 - "Provide needed additional short-term parking facilities in peripheral locations around but not within the downtown core, adjacent to major thoroughfares, subject to the criteria in Objective 1, Policy 1 of the Citywide Parking Plan."	Short-Term Parking Policy - "Provide needed additional short-term parking facilities in peripheral locations around but not within the downtown core, adjacent to major thoroughfares."
20.	Objective 1, Policy 3 - "Discourage the addition of new long-term parking spaces in and around downtown, limit the amount of new spaces to that which cannot reasonably be accommodated by transit and locate long term parking facilities in areas peripheral to the downtown commercial district."	Commuter Parking Policies - "Discourage new long-term parking spaces in and around downtown."
21.	Objective 1, Policy 4 - "Encourage firms requiring a large number of vehicles for business purposes to locate outside the downtown commercial district or to locate their vehicle fleets outside the downtown commercial district."	See items 18, 19 and 20 above.
22.	Objective 1, Policy 5 - "Develop shuttle transit systems to supplement trunk lines for travel within the greater downtown area."	Shuttle Transit Policy - Same.
23.	Objective 1, Policy 6 - "Organize and control traffic circulation to reduce congestion in the core caused by through traffic and to channel vehicles into peripheral parking facilities."	Auto Circulation Policy - Same.
24.	Objective 1, Policy 7 - "Locate drive-in, automobile-oriented quick-stop and other auto-oriented uses on sites outside the office, retail and general commercial districts of downtown."	Auto Circulation Policy - Same.

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN (Continued)

MASTER PLAN	DOWNTOWN PLAN
25. Objective 1, Policy 8 - "Develop the downtown core as an automobile control area."	Auto Circulation Policy - Same.
26. Downtown Transportation Plan, Objective 2 - "Improve the downtown pedestrian circulation system, especially within the downtown core, to provide for the comfortable, safe and convenient movement of pedestrians."	Pedestrians Objective - "Improve the downtown pedestrian system, especially within the core, to provide for efficient, comfortable, and safe movement."
27. Objective 2, Policy 2 - "Minimize obstructions to through pedestrian movement on sidewalks in the downtown core."	Pedestrians Policy - Same.
28. Objective 2, Policy 4 - "Create a pedestrian network in the downtown core area which includes streets devoted to or primarily oriented to pedestrian use."	Pedestrian Policy - Same.
29. Downtown Transportation Plan, Objective 3 - "Provide convenient and high-capacity loading points for transit travelers."	See items 30 and 31 below.
30. Objective 2, Policy 1 - "Provide for commuter bus loading, if possible, at off-street terminals; where this is not possible, special curbside loading areas should be provided at noncongested locations."	Transit Transfers Policy - "Provide for commuter bus loading, if possible, at off-street terminals. Where this is not possible, provide special curbside loading areas at noncongested locations."
31. Objective 2, Policy - "Make convenient transfers possible by coordinating local and regional transit systems in common or nearby terminals."	Transit Transfers Policy - "Make convenient transfers possible by establishing common or closely located terminals for local and regional transit systems."
32. Objective 4 - "Improve facilities for freight deliveries and business services."	Off-Street Loading Objective - Same.
33. Objective 4, Policy 1 - "Require off-street facilities for freight loading and service vehicles in all new developments sufficient to meet the demands generated by the intended uses, and seek opportunities for new facilities for old buildings."	Off-Street Loading Policy - Same.

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN (Continued)

	MASTER PLAN	DOWNTOWN PLAN
	Residence Element:	
34.	Objective 1 - "To provide new housing for all income groups in appropriate locations."	Space for Housing Policy - "Promote the inclusion of housing in downtown commercial developments." (See also items 35 and 36.)
35.	Objective 1, Policy 2 - "Facilitate the conversion of underused industrial and commercial areas to residential use."	Space for Housing Policy - Same.
36.	Objective 1, Policy 3 - "Promote the inclusion of housing in downtown commercial developments."	Space for Housing Policy - Same.
37.	Objective 3 - "To retain the existing supply of housing."	Space for Housing Objective - "Protect residential uses in and adjacent to downtown from encroachment by commercial uses."
38.	Objective 3, Policy 1 - "Discourage the demolition of existing buildings."	Space for Housing Policy - "Restrict the demolition and conversion of housing in commercial areas."
39.	Objective 3, Policy 2 - "Restrict the conversion of housing in commercial and industrial areas."	See item 38.
40.	Objective 3, Policy 3 - "Preserve the existing stock of residential hotels."	Space for Housing Policy - "Preserve existing residential hotels."
41.	Objective 5 - "To provide housing affordable by all income groups, particularly low and moderate income households."	No recommendations.
42.	Objective 5, Policy 8 - "Ensure that office developments and higher educational institutions assist in meeting the housing demand that they generate."	No recommendations.

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN (Continued)

	MASTER PLAN	DOWNTOWN PLAN
43.	Objective 9 - "To address housing needs through a coordinated regional approach."	No recommendations.
44.	Objective 9, Policy 1 - "Encourage the balancing of regional employment growth with the development and growth of housing in the region."	No recommendations.
Urban Design Element:		
45.	Objective 1, Policy 3 - "Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts."	Urban Form Objectives - "Create an urban form for downtown that enhances San Francisco's stature as one of the world's visually attractive cities." "To create a building form that is visually interesting and harmonizes with surrounding buildings."
46.	Objective 2, Policy 4 - "Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development."	Urban Form Policy - Same.
47.	Objective 2, Policy 5 - "Use care in remodeling of older buildings, in order to enhance rather than weaken the original character of such buildings."	Preserving the Past Policy - "Use care in remodeling significant older buildings to enhance rather than weaken their original character."
48.	Objective 2, Policy 6 - "Respect the character of older development nearby in the design of new buildings."	Preserving the Past Policy - "Design new buildings to respect the character of older development nearby."
49.	Objective 3, Policy 1 - "Promote harmony in the visual relationships and transitions between new and older buildings. . . New buildings should be made sympathetic to the scale, form, and proportion of older development."	Urban Form Policy - "Ensure that new facades relate harmoniously with nearby facade patterns."

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN (Continued)

	MASTER PLAN	DOWNTOWN PLAN
50.	Objective 3, Policy 2 - "Avoid extreme contrasts in color, shape and other characteristics which will cause new buildings to stand out in excess of their public importance."	Urban Form Policy - "Assume that new buildings contribute to the visual unity of the City." (See also items 49, 51 and 53.)
51.	Objective 3, Policy 3 - "Promote efforts to achieve high quality of design for buildings to be constructed at prominent locations."	Urban Form Policy - "Foster sculpturing of building form, less overpowing buildings and more interesting tops." The Plan also contains specific design standards.
52.	Objective 3, Policy 4 - "Promote building forms that will respect and improve the integrity of open spaces and other public areas."	Urban Form Policies - "Promote building forms that will maximize the sun access to open spaces and other public areas." "Promote buildings forms that will minimize the creation of surface winds near the base of buildings."
53.	Objective 3, Policy 5 - "Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development."	Urban Form Policy - Same.
54.	Objective 3, Policy 6 - "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction."	See items 49, 50, 51, 52, and 53.
55.	Objective 3, Policy 9 - "Encourage a continuing awareness of the long term effects of growth upon the physical form of the City."	See item 45. The Plan also contains a specific design standards.

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN (Continued)

MASTER PLAN	DOWNTOWN PLAN
Recreation and Open Space Element:	
56. Citywide System, Policy 1 - "Preserve public open space."	Open Space Policies - "Address the need for human comfort in the design of open space by minimizing wind and maximizing sunshine." (See also item 40 above.) "Keep open-space facilities available to the public."
57. Citywide System, Policy 2 - "Acquire additional citywide open space for public use."	Open Space Policies - "Develop an open space system that gives every person living and working downtown access to a sizable sunlit open space within convenient walking distance." "Encourage the creation of new open spaces that become a part of an interconnected pedestrian network."
Land Use Element:	
58. Objective 2 - "Improvement of the city as a place for commerce and industry by making it more efficient, orderly, and satisfactory for the production, exchange and distribution of goods and services, with adequate space for each type of economic activity and improved facilities for the loading and movement of goods."	See items 1, 2, 3, 9, 12, 17, 32 and 33.
59. Objective 3 - "Organization of the two principal functional parts of the city - the working areas and the community areas - so that each may be clearly distinguished from but complimentary to the other, and so that the economic, social, and cultural development of the city may be furthered."	Implementing actions of the Downtown Plan would rezone areas which are presently designated commercial classifications to residential and mixed-use classifications.

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN (Continued)

MASTER PLAN	DOWNTOWN PLAN
60. Text From Plan - "The types of use for which land is allocated in the working areas are classified into four categories: 1) Downtown, 2) Business and Services, 3) Light Industry, and 4) General Industry.	The C-3 boundaries would be approximately the same as existing boundaries. The Plan proposes to revise some boundaries to reflect existing uses. (See item 59.)
Community Safety Element:	
61. Objective 1, Policy 1 - Apply a minimum level of acceptable risk to structures and uses of land based upon the nature of use, importance of the use to public safety and welfare, and density of occupancy.	New office buildings, hotels, and large stores built under the Downtown Plan would be designed to Risk Level 2, as described on p. 13 of the of the Community Safety Element of the Comprehensive Plan. Risk Level 2 allows failure of mechanical systems and damage to interior or exterior of the building, but does not allow structural collapse or mechanical failure that would cause loss of life. It should be noted that, while designs would be theoretically adequate to achieve these goals, the theory is still evolving and structures do not always perform as intended in earthquakes.
62. Objective 1, Policy 2 - Initiate orderly abatement of hazards from existing buildings and structures.	New development under the Plan would result in the demolition of some older hazardous structures, but would also explicitly protect a large number of these buildings. Preservation of these buildings would allow, but not require, seismic reinforcement. The Plan would not affect the ongoing parapet removal and reinforcement program.

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN (Continued)

MASTER PLAN	DOWNTOWN PLAN
63. Objective 1, Policy 4 - Require geologic or soil engineering site investigations, and compensating structural design based on findings, for all new structures in special geologic study areas.	Geotechnical investigations generally are required for major new structures, and designs are in accordance with the San Francisco or Uniform Building Codes, as applicable at time of construction. Approval of buildings in the Special Geologic Study Areas (including much of Subarea 1 and 2) would be granted by the Planning Commission only if it determined that design were adequate to provide safety in accordance with acceptable risk levels. The Plan would not affect this policy.
64. Objective 1, Policy 5 - Modify permitted land uses and types of structures, where appropriate, according to geologic factors and consistent with the levels of acceptable risk.	The Downtown Plan would shift a portion of development which would otherwise occur in Subarea 1 (under the existing Planning Code) to Subarea 2. All of Subarea 2 is of poor geologic stability and is a higher risk than some portions of Subarea 1. However, because of its lower population density and, consequently, less congestion under emergency conditions, development of Subarea 2 would not pose as extreme risks as would adding development to the poorer geologic area of Subarea 1 (see Figure IV.K.2, p. IV.K.5).
65. Objective 2, Policy 1 - Preserve the architectural design character of buildings and structures subject to requirements for abatement of hazards to life safety.	The Plan sets a high priority on the preservation of architecturally significant buildings, and would allow for abatement of hazardous features as long

TABLE IV.A.1: RELATIONSHIP BETWEEN OBJECTIVES AND POLICIES OF THE MASTER PLAN AND THE DOWNTOWN PLAN (Continued)

MASTER PLAN	DOWNTOWN PLAN
65. (Continued)	as this abatement were consistent with the architectural integrity of the building. The Plan would allow rehabilitation and conversion of these buildings if not architecturally detrimental to the structure; seismic reinforcement would be required for complete rehabilitation or conversion.

SOURCE: San Francisco Department of City Planning and Environmental Science Associates, Inc.

Regional Plans

The Downtown Plan as a part of the San Francisco Master Plan would comply with the Transportation Plan prepared by MTC, the Air Quality Plan prepared by the BAAQMD, MTC and ABAG and most other portions of the Regional Plan 1980 prepared by ABAG. Concerning housing and transportation, the Regional Plan notes that: "As San Francisco continues to grow as a white collar employment center, and lacking commensurate growth of housing opportunities at a price/rent level to accommodate new workers, the regional trend towards long-distance commuting will continue. . . . The adverse impacts of this trend include substantially more congestion on all highways leading into the city, exacerbation of air quality problems, increased demand for scarce energy resources, and further strain on transit systems, some of which currently operate at capacity during peak hours."

Although the Downtown Plan itself does not address housing affordability, air quality or energy issues, objectives and policies of the Master Plan address them. Transportation issues are addressed by the Downtown Plan (see Table IV.A.1, items 13-31). Environmental impacts of employment growth and increased commuting to the downtown, including air quality, energy, and transportation impacts, are included in this EIR.

The Regional Plan also notes that "ABAG projections show only a 7% increase in occupied dwelling units in San Francisco to 1990 and a projected decline in population. When this is compared with a projected 21% increase in total employment, it seems evident that housing opportunities will not expand at a rate that will improve the housing/job balance." Housing and employment balance are addressed on pages 39 and 40 of the Downtown Plan. Other housing issues are addressed by both the Residence Element of the Master Plan and the Downtown Plan (see Figure IV.A.1, items 32-44).

No tabulation comparing the Downtown Plan to regional plans has been prepared, as the regional plans are more general than the San Francisco Master Plan policies as they apply to the Downtown Plan, and no additional comparative impressions could be gained.

NOTES - Local and Regional Plans and Policies

/1/ City Planning Commission Resolution 8001, June 29, 1978.

/2/ City Planning Commission Resolutions 6834, April 27, 1972; 7647, January 20, 1977; and 9434, June 24, 1982.

/3/ This proposal is now under study in the I-280 Transfer Concept Program under the direction of Caltrans.

/4/ City Planning Commission Resolutions 6706, April 8, 1971; 7417, December 11, 1975; 9662, April 21, 1983.

/5/ The Department of City Planning conducted a rezoning study of the North-of-Market district in 1982-83.

/6/ City Planning Commission Resolution 6745, August 26, 1971.

/7/ Specific height and bulk districts have been adopted as part of the City Planning Code, thus attaining the force of law. Amendments to these limits are proposed in several of the Alternatives under consideration in this report.

/8/ City Planning Commission Resolution No. 7021, May 24, 1973.

/9/ City Planning Commission Resolution No. 7020, May 24, 1973.

/10/ City Planning Commission Resolution No. 7244, September 19, 1974.

/11/ City Planning Commission Resolution No. 9409, June 3, 1982.

/12/ City Planning Commission Resolution No. 7241, September 12, 1974.

/13/ City Planning Commission Resolution No. 7643, January 19, 1980.

/14/ Regional Plan 1980, San Francisco Bay Area, ABAG, 1980.

/15/ San Francisco Bay Plan, San Francisco Bay Conservation and Development Commission, January 1969, July 1979 as amended.

B. LAND USE AND REAL ESTATE DEVELOPMENT

SETTING

C-3 District Background

Introduction

The C-3 District is the most intensively developed area in San Francisco. Though the district includes only about two percent of the land area in the City, most of the highrise buildings in the City are located here. Office uses occupy the majority of the space in the C-3 District; retail establishments, hotels, housing and other uses are also present, but none of these uses occupy more than ten percent of the space.

Among the seven subareas of the C-3 District, nearly half of the space is in the Central Office area, Subarea 1./1/ This reflects the relatively large geographic area included within the subarea boundaries as well as the high density of development there. The Tenderloin and Union Square areas, Subareas 5 and 6, have the next largest shares of C-3 District space, about 18 and 12 percent, respectively. The remaining four subareas have smaller shares of space, ranging from four to about eight percent. These include Chinatown, Subarea 7, the South Van Ness area, Subarea 4, and the two subareas south of Market Street, Subareas 2 and 3.

Table IV.B.1 shows C-3 District space by use and subarea at the end of 1981. The information comes from the Downtown EIR Land Use Inventory. (See Appendix C.) An analysis of the land uses shown in the table follows.

Office Space

Amount of Office Space. The space identified in the inventory includes 55 million sq. ft. of office space./2/ This figure does not include retail and other non-office uses also located in office buildings. These non-office

TABLE IV.B.1: C-3 DISTRICT SPACE BY USE AND SUBAREA, 1981(a) (Thousands Of Gross Sq. Ft.)

Use	Subarea							Total C-3 District	Percent of Total
	1	2	3	4	5	6	7		
Office(b)	37,162	3,948	904	4,626	2,714	4,594	1,380	55,328	57.5%
% of C-3 Total	67.2	7.1	1.6	8.4	4.9	8.3	2.5	100.0%	
Retail	1,706	207	430	415	1,013	3,372	613	7,756	8.0%
% of C-3 Total	22.0	2.7	5.5	5.4	13.0	43.5	7.9	100.0%	
Transient Hotel	1,921	--	249	31	5,024	1,936	61	9,222	9.5%
% of C-3 Total	20.8	--	2.7	0.3	54.5	21.0	0.7	100.0%	
Residential Hotel	160	--	162	74	2,205	194	53	2,848	3.0%
% of C-3 Total	5.6	--	5.7	2.6	77.4	6.8	1.9	100.0%	
Housing	64	12	831	276	2,167	-	730	4,080	4.2%
% of C-3 Total	1.6	.3	20.4	6.7	53.1	-	17.9	100.0%	
Cultural/Institutional/ Educational/Other	1,097	163	871	183	2,179	936	889	6,318	6.6%
% of C-3 Total	17.3	2.6	13.8	2.9	34.5	14.8	14.1	100.0%	
Industrial/ Warehouse/ Automotive	153	637	2,324	105	1,167	32	47	4,465	4.6%
% of C-3 Total	3.4	14.3	52.0	2.4	26.1	0.7	1.1	100%	
Parking	1,053	1,108	1,643	299	1,250	890	108	6,351	6.6%
% of C-3 Total	16.6	17.4	25.9	4.7	19.7	14.0	1.7	100%	
TOTAL	43,316	6,075	7,414	6,009	17,719	11,954	3,881	96,368	100.0%
Percent of Total	45.0%	6.3%	7.7%	6.2%	18.4%	12.4%	4.0%	100.0%	

(a) Based on Downtown EIR Land Use Inventory (See Appendix C.)

(b) Non-office uses, such as retail and parking, located in office buildings are not included in estimates of office space, but are included in their respective space use categories. They occupy approximately 10 percent of the space in office buildings.

SOURCE: Recht Hausrath & Associates

uses occupy about 10 percent of the space in office buildings./3/ The total space in office buildings in the C-3 District was thus about 61 million square feet in 1981.

This report includes information about both space occupied by office uses (hereinafter called office space) and total space in office buildings (hereinafter called space in office buildings). Both definitions refer to useful information. Information about office space is necessary because it is this measure that relates office space to type of business and to office employment./4/ Information about space in office buildings is appropriate because both (1) Planning Code regulations for new buildings and (2) statistics on past development and information on proposed future projects, are expressed in terms of this definition.

Office Building Construction. A large share of the office buildings in San Francisco has been built since 1965. Citywide, from 1965 through 1981, 29.5 million sq. ft. of space was constructed in office buildings. The annual average construction for this 17-year period was 1.7 million sq. ft. The five-year annual average construction remained relatively constant from 1965 through 1979: 1.68 million from 1965-1969, 1.72 million from 1970-1974, and 1.63 million from 1975-1979. Annual average office building construction increased to 2.16 million sq. ft. for the 1980-1981 period. If the space to be completed from 1982 to 1984 is combined with the 1980-1981 figures, the five-year annual average for 1980 through 1984 will be 2.48 million sq. ft. of space in new office buildings./5/

The majority of space in office buildings built in San Francisco has been constructed in the C-3 District. Office building construction in the C-3 District as described in the Downtown Plan averaged 1.5 million sq. ft. per year from 1965 through 1981. This amount represents 88 percent of citywide annual average development for this period./6/ The more recent C-3 District development has maintained a similar percentage.

Location of Office Space. Two-thirds of the office space in the C-3 District is located in the Central Office area, Subarea 1. (See Table IV.B.1.) This area also has the highest density of office space, density being defined here as the square feet of office space divided by the land area of the subarea. The density of office space indicates the intensity of office use independent of the size of the subarea. The South Van Ness area, Subarea 4, has the next highest density of office space, due largely to the presence of bank information processing offices. The Union Square area, Subarea 6, has the third highest density of office space. The latter two subareas each have about eight percent of the office space in the C-3 District. The other subareas all have lesser amounts and lesser densities of office space.

The majority of new office space is being built in Subarea 1. Through the late 1970's the triangle bounded by Montgomery, California and Market Streets comprised the premium office location in the City. Almost all company headquarters and the business and professional services they used were located in this area. The large operations for which cost control was a priority, utilities, bank information processing, and government offices, were the principal office users outside of this area. As the availability of sites in the preferred location has decreased, office development adjacent to this triangle on all three sides has grown rapidly.

Expansion of the high-density office core has been occurring to the north (towards the Jackson Square area), to the west (towards the Union Square and Chinatown areas), further south of Market Street, and west along Market Street. As this occurs, other activities have been shifting to lower cost properties with long term potential in areas to the south of Market Street outside the C-3 District.

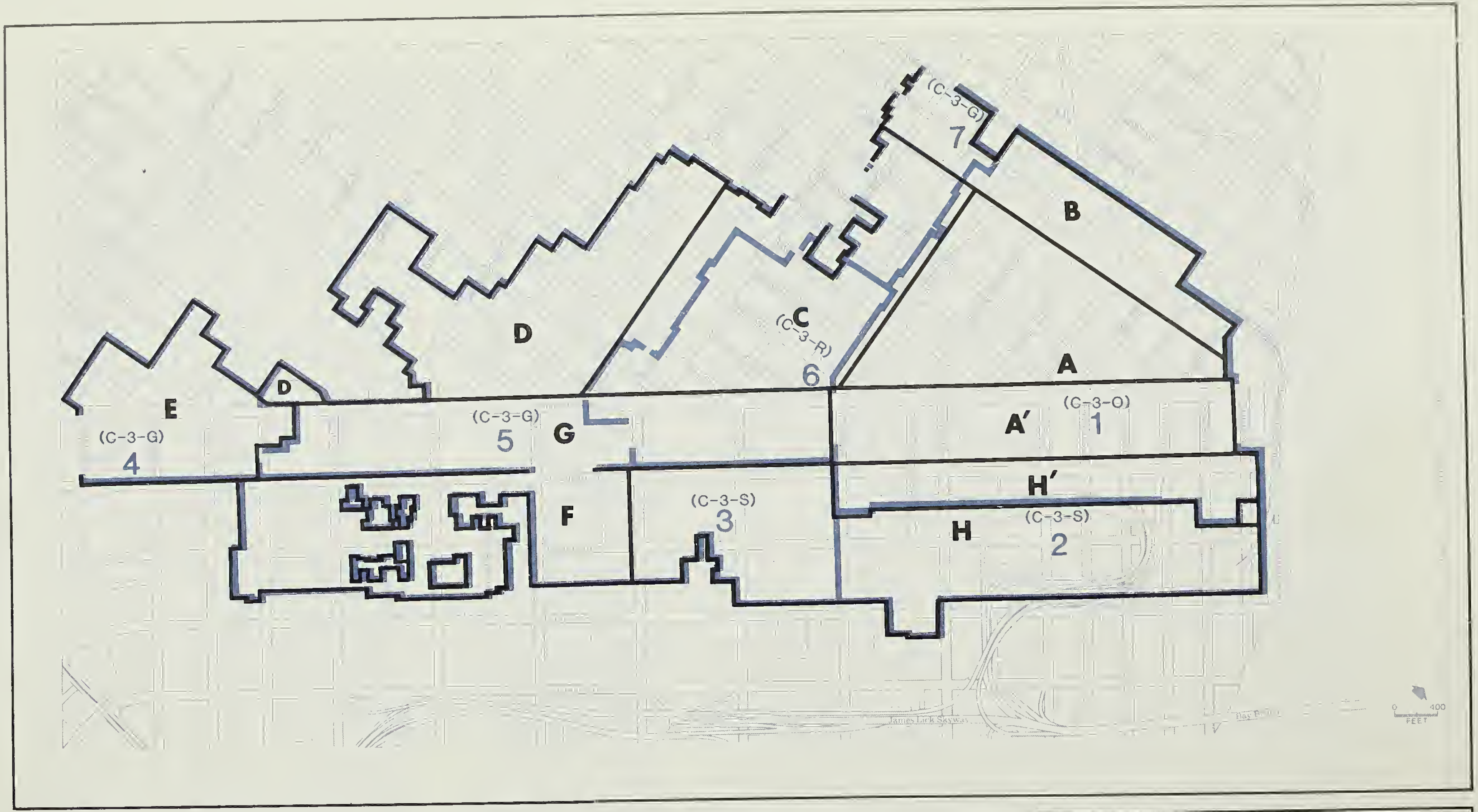
Office Rents. Office space rents throughout the C-3 District indicate the value that office users place on different locations within the District. Typical 1982 office rents for various areas of the C-3 District are shown in Figure IV.B.1./7/ It should be recognized that each rent area includes buildings in a variety of conditions and situated in a variety of locations within the rent area. In Rent Area A, for example, some new space is available for $30 per sq. ft. per year while top floor space in a premium building may cost $50 per sq. ft. per year. Old buildings have a greater percentage rent range, as the condition and type of facilities available in the buildings vary more widely. The rents shown in Figure IV.B.1 also apply in 1983 since there was no significant change in office rents from 1982 to 1983.

Area A typically has the highest office rents; it is sometimes referred to as the "premium rent area" in later discussions. This rent area covers most of Subarea 1, the financial district. Rent Areas A' and B, which are adjacent to Rent Area A, have the next highest rents. Rent Area H' represents the fringe of the area of recent major office building development. Rent Areas C and G also have relatively high rents, the former due to proximity to the financial district and the latter due to Market Street locations. Rent Area H, south of the financial district and extending west one block past Yerba Buena Center, has the next highest rents. Areas D and E, essentially the Tenderloin and South Van Ness subareas, have lower rents. Rent Area F, furthest from the financial district and without easy accessibility to the Market Street transportation corridor, has the lowest rents.

Office Space in the City and Region. The large majority of office space in San Francisco is in the C-3 District./8/ Other office space in the City includes that in the north waterfront areas, Executive Park (being built between Candlestick Park and Highway 101), both new and converted office space south of the C-3 District, and office buildings scattered throughout the City.

Space in office buildings in the other eight counties of the nine-county Bay Area is estimated to be 35 million sq. ft. as of the end of 1979,/9/ and had probably exceeded 40 million sq. ft. by 1981.

While San Francisco has the majority of existing office space in the region, the rapid growth of office functions in other Bay Area counties has resulted in less than half of the new space in office buildings in the region being built in San Francisco. Forty-five percent of the dollar value of building permits issued for office construction in the region in the years 1972 through 1979 was for San Francisco development./10/ Because the average cost per square



TYPICAL OFFICE RENTS (PER SQUARE FOOT, PER YEAR IN 1982 DOLLARS)

RENT AREA	NEW BUILDINGS (A)	OLD BUILDINGS (B)
A	$ 35	$ 22
A'	32	18
B	32	20
C	28	18
D	24	13
E	24	13
F	20	10
G	28	15
H	26	15
H'	29	17

NOTES: (A) INCLUDES BUILDINGS UNDER CONSTRUCTION AND COMPLETED SINCE ABOUT 1945.

(B) INCLUDES BUILDINGS COMPLETED BEFORE ABOUT 1945.

NOTE: Existing Use Districts are shown in blue.

FIGURE IV.B.1:
C-3 DISTRICT RENT AREAS

SOURCE: Recht Hausrath & Associates

foot for office construction is higher in San Francisco, however, the City's recent share of office space construction is less than 45 percent. Santa Clara County has the second largest share of the office building permit value in the region with 18 percent of the nine-county total.

Retail Space

The Downtown EIR Land Use Inventory identifies almost eight million sq. ft. of retail space in the C-3 District. This amount includes free-standing retail space (for example, department stores around Union Square and small storefront shops) and shops and restaurants in both old and new office buildings (ranging from large complexes such as the Embarcadero Center to smaller ground floor establishments).

Retail space is concentrated in Subarea 6, the Union Square area, which contains over 40 percent of total retail space in the C-3 District. Although retail space in Subarea 1 is a relatively small share (four percent) of total space in the subarea, this amount is 22 percent of the total retail space in the C-3 District. Much of the Subarea 1 retail space is in office buildings. Relative to its small size, Subarea 7, Chinatown, contains a large proportion of retail space. Sixteen percent of the total space in the Chinatown Subarea is identified as retail space, a share second only to that found in Subarea 6. Retail space is a relatively small share of the total space in all other subareas.

The C-3 District includes the principal retail development in the City. The area not only serves City residents, downtown workers and tourists, but is also a major retailing center for the region. About one-third of total citywide retail sales occurs in the downtown retail district. The majority of these retail sales are for shoppers goods such as apparel, household goods, and specialty items./11/ The importance of retailing downtown is highlighted by the fact that over one-half of citywide shoppers goods sales occur in the downtown area./12/

Retail facilities in the City outside the C-3 District are widely distributed. The Stonestown Shopping Center is the largest facility coordinated under one management. Compared to the downtown area, sales at Stonestown represent a smaller share of total retail sales in the City (five to ten percent of citywide shoppers goods sales)./13/ The rest of City retailing is distributed among the neighborhood shopping districts, along major thoroughfares, and in tourist areas such as Fisherman's Wharf.

Outside the City, there are several large regional shopping centers to the south, east, and north of San Francisco. To some extent, retail facilities in the C-3 District compete with these centers.

Hotel Space

The Downtown EIR Land Use Inventory identifies about 12 million sq. ft. of hotel space in the C-3 District. About one-quarter of this space is in residential hotels, the majority of which are in Subarea 5. The remainder is in transient hotels, representing about 16,400 hotel rooms./14/ Transient hotels account for about 10 percent of the total space in the C-3 District (see Table IV.B.1).

A majority of the transient hotel space in the C-3 District is located between Union Square and the heart of the Tenderloin, in Subareas 5 and 6. Subarea 5, the Tenderloin, contains over half of the total transient hotel space in the C-3 District; hotels, both transient and residential, account for 41 percent of the total space in this subarea. Most of the balance of the transient hotel space in the C-3 District is in Subareas 1 and 6, which contain about equal amounts of transient hotel space.

The hotel rooms outside of the C-3 District represent about 30 percent of the transient hotel rooms in the City. The Nob Hill area has several first class hotels that are competitive with the first class hotels in the C-3 District. A large proportion of the hotel rooms in the rest of the City are less expensive motor hotel rooms. These accommodations, such as those located on Van Ness Avenue, Lombard Street and Fisherman's Wharf are not as directly competitive with C-3 District hotels.

Outside the City, the primary alternatives to San Francisco hotels are in northern San Mateo County. The number of hotel rooms in this area is growing very rapidly. Their primary advantage is their proximity to San Francisco International Airport.

Residential Space

The 1980 Census provides detailed information on housing that supplements the general data gathered in the Downtown EIR Land Use Inventory./15/ Table IV.B.2 shows the characteristics of the housing stock, including residential hotel units, in the "downtown census tracts", a group of tracts approximately constituting the C-3 District./16/

In 1980, there were about 21,900 housing units in these tracts, about seven percent of the total housing stock in the City. Ninety-eight percent of the occupied units in the area were renter-occupied./17/ It is estimated that about half these units could be in residential hotels./18/

According to the Census, about 12 percent of the housing units in the downtown census tracts were vacant in 1980; about 15 percent of all the vacant units in the City. Most of these units were vacant units for rent. This vacancy could be influenced by the large share of residential hotels, where tenants change more frequently than in other housing.

Rents for units in the downtown census tracts are lower than the average for the City. In the 1980 Census data, median monthly rents ranged from $122 to $222 with only one of 10 tracts showing median rents over $190 per month. The median rent for the City as a whole was reported as $267 per month./19/

Between 1970 and 1980, there was a net decrease of about 6,400 units in the downtown census tracts, a decline of about 23 percent from 1970. Table IV.B.3 shows the changes in housing stock reported by the Census. This decrease could indicate the loss of units to demolition and to conversion from residential hotel to transient hotel, apartment, or commercial uses./20/

TABLE IV.B.2: CHARACTERISTICS OF THE HOUSING STOCK IN DOWNTOWN CENSUS TRACTS AND IN THE CITY, 1980

Characteristics	City	Downtown Census Tracts (a)	Downtown Census Tracts As A Percent Of Total City
Total Units (b)	316,351	21,885	6.9%
Owner-Occupied Units	100,786	341	0.3%
Renter-Occupied Units	198,170	18,941	9.6%
Vacant Units	17,395	2,603	15.0%
Vacancy Rate	5.5%	11.9%	
Vacant Units for Rent	8,483	1,864	22.0%
Rental Vacancy Rate	4.1%	9.0%	

(a) Ten complete census tracts (114, 115, 117, 118, 121, 123-125, 176, 178 as shown in the map at the end of Appendix G) are used as an approximation of the C-3 District.

(b) Total year-round housing units including condominiums and residential hotels.

SOURCE: U.S. Department of Commerce, City and County of San Francisco, 1980 Census Information File STF1-A, March 1982, Reports #1 and #4.

Other Non-Residential Space

The cultural/institutional/educational/other and industrial/warehouse/automotive categories of space use are both aggregations of a number of uses with some similar characteristics. The activities in the cultural/institutional/educational/other category are often not able to compete for premium sites or new building space. Also, many of the activities in this group occupy relatively special use buildings (churches, schools, lodges, or meeting halls, etc.). The large portion (over one-third) of this type of C-3 District space that is located in Subarea 5, the Tenderloin, reflects these factors. The

TABLE IV.B.3: CHANGES IN HOUSING STOCK IN DOWNTOWN CENSUS TRACTS (a), 1970-1980

	1970	1980	Change 1970-1980	Percent Change
Total Units (b)	28,262	21,885	(6,377)	(22.6%)
Owner-Occupied Units	299	341	42	14.0%
Renter-Occupied Units	24,205	18,941	(5,264)	(21.7%)
Vacant Units	3,758	2,603	(1,155)	(30.7%)

(a) Ten complete census tracts (114-115, 117, 118, 121, 123-125, 176, 178 as shown in the map at the end of Appendix G) were used as an approximation of the C-3 District.

(b) Total year-round housing units including condominiums and residential hotels.

SOURCE: U.S. Department of Commerce, 1970 Census of Population and Housing: Census Tracts, San Francisco - Oakland SMSA; and City and County of San Francisco, 1980 Census Information File STF1-A, March 1982, Reports #1 and #4.

activities in this type of space in Subarea 1 tend to be those in office-type space including educational facilities such as colleges and business libraries. The Moscone Center in Subarea 3 is one significant new facility that falls in this category.

The industrial/warehouse/automotive category includes space with a low intensity of use. The employment density is low and the buildings are one and two stories and generally relatively old. During the last couple of decades the amount of C-3 District space occupied by these activities has declined. This decline is partially due to the competition for their sites from other uses, especially office, which is usually expressed in the form of higher rents. The decline is also partially due to the choice by these activities to locate in less congested, more peripheral locations.

Parking use includes parking lots as well as parking space in buildings. Parking in Subarea 1 is largely space in office buildings. Parking in Subarea 6 primarily serves downtown retail activities. About two-thirds of C-3 District parking is located in Subareas 2, 3, 4 and 5, outside the most intensely developed areas.

Overall Density of Development

A high density of development in an area generally indicates that rents have been strong enough to justify the construction of large buildings. The space use that contributes the greatest density is usually the use capable of outbidding other uses for sites. A low density indicates an opportunity for new development if market demand is or becomes strong.

Average subarea density of development is defined as total building space divided by total land area, excluding public rights of way. Table IV.B.4 shows the land area, the floor area (including all space uses), and the overall average density of existing development for each of the subareas of the C-3 District. Comparison of average density among subareas indicates those C-3 District areas where the real estate market has been strong enough to justify large buildings and those areas where future development opportunities are likely to be greatest when market demand becomes strong./21/ Review of Tables IV.B.1 and IV.B.4 provides insights into the uses which are responsible for higher densities in some areas, and those uses in lower density areas which could be affected by future development pressures.

As would be expected, Subarea 1 has the highest density of development, primarily due to highrise office buildings. Subarea 6 has the second highest density, attributable to a mix of retail, hotel, and office uses. Bank office buildings account for the majority of the relatively high density in Subarea 4, while hotels contribute most to the higher density in Subarea 5. Subarea 7 shows a mid-level density which, like Subarea 6, can be attributed to no one principal use. It should be noted that Subareas 5 and 6 have a higher density north of Market Street and a lower density south of Market Street. The lower densities in Subareas 2 and 3 and in portions of Subareas 5 and 6

TABLE IV.B.4: C-3 DISTRICT DENSITY OF EXISTING DEVELOPMENT BY SUBAREA, 1981

Subarea	Land Area (Thousands of Gross Sq. Ft.) (a)	Total Floor Space (Thousands of Gross Sq. Ft.) (b)	Average Subarea Density of Development (c)
1	6,411	43,316	6.8
2	2,065	6,075	2.8
3	3,824	7,414	1.9
4	1,181	6,009	5.1
5	4,134	17,719	4.0
6	1,974	11,954	6.0
7	918	3,881	4.2
TOTAL	20,507	96,368	4.7

(a) From the Downtown EIR Land Use Inventory; not including public rights of way such as streets and sidewalks.

(b) From the Downtown EIR Land Use Inventory; including all space uses (open space, at-grade parking, and vacant sites, as well as all space in buildings).

(c) Average subarea density is derived by dividing total space in buildings (column 2) by total land area (column 1).

SOURCE: Recht Hausrath & Associates

indicate that there are or could be an increase in development opportunities in these areas. In some cases, new development could take place on vacant sites or on sites with few, low intensity uses. Uses in the industrial/warehouse/automotive group and parking could come under the most pressure for change in these areas. Cultural/institutional/educational/other uses and small scale retail and office activities could also come under pressure.

C-3 District 1984

Construction To 1984

Table IV.B.5 shows new space under construction in the C-3 District as of mid-1982 by type of building./22/ Office buildings represent by far the largest share of this new development, with about 7.4 million sq. ft. under construction.

TABLE IV.B.5: AMOUNT OF SPACE UNDER CONSTRUCTION IN C-3 DISTRICT BY TYPE OF BUILDING, 1982 (a)

Building Type	New Construction (Thousands of Gross Sq. Ft.)	Percent of Total New Construction
Office (b)	7,418	91%
Retail (c)	175	2%
Transient Hotel	500	6%
Housing (d)	98	1%
TOTAL	8,191	100%

(a) The amount shown is total new construction without allowance for demolition.

(b) Space in office buildings under construction includes space for office, retail, and cultural/institutional uses.

(c) Space in free-standing retail buildings under construction does not include the retail use in new office buildings.

(d) The new housing is incorporated in office building projects, but is listed separately so that the office building figures are comparable with statistics on historical and new construction.

SOURCE: Department of City Planning

The average period of construction for C-3 District office buildings is approximately three years, with occupancy occurring gradually as the floors are completed with their tenant improvements. All of the buildings under construction in 1982 will probably have space available for occupancy in 1984. Therefore, these buildings include the new space to be constructed in the C-3 District in 1982, 1983, and 1984.

Attributing this growth to the years 1982-84 implies an average construction of office building space of 2.5 million sq. ft. per year for the C-3 District. This rate of construction exceeds the average for the City from 1965 through 1981 (1.7 million sq. ft. per year).

Business Cycles and Office Vacancies

The relatively large amount of space under construction should be viewed in the context of the office market of the last few years. From 1975 through at least 1980 the economy generated an increase in the demand for office space that exceeded the supply of new office space. The vacancy rate was low and rents increased during this period. Strong demand and high rents subsequently resulted in the large amount of office space which was built in 1981 and which is being completed in the 1982-84 period. At the same time that new development increased, however, the economy entered a recessionary period. During 1982 and 1983, vacancy rates increased, office rents remained fairly stable, and space was sometimes leased by offering concessions to tenants. By the end of 1983, economic recovery was underway./23/

The perspective of this study covers roughly two decades, the years 1981 to 2000. During this period there will probably be several cycles in the economy, and fast and slow periods in office construction. Little is gained from attention to short-term cycles in a study with a long-term perspective. Therefore, the forecasts of the demand for office space to accommodate employment growth are made for the periods 1981 - 1990 and 1990 - 2000./24/ The annual compound rate of employment growth forecast for the period 1981-1990 is used to calculate the demand for space in 1984. No attempt is made to forecast the extent or duration of the current recessionary period.

It can nevertheless be noted that even with the assumption of trended employment growth in the 1981-84 period, the amount of office construction exceeds the projected demand. The net increase in office space is 6.7 million sq. ft. during this period./25/ The office employment forecast results in a demand for 4.5 million additional sq. ft. of office space by 1984./26/ Without accounting for the recent recession, this differential would increase the office space vacancy rate by about four percentage points./27/ Depending on the rate of recovery, the recent recession could contribute to an even higher 1984 vacancy rate.

Space Use

Table IV.B.6 shows the projected gross areas for each space use in each subarea for 1984. This table presents information that is comparable to the figures shown in Table IV.B.1, though accounting for changes in space use from 1981 to 1984. The 1984 setting consists of space existing at the end of 1981, plus space constructed in 1982, 1983, and 1984, less space removed preparatory to this construction. The table also reflects the projected conversion of some space to office use during this period./28/

The net increase in total space in the C-3 District by 1984 will be 7.2 million sq. ft., an increase of 7.5 percent above the amount existing at the end of 1981./29/ Office space dominates this addition of space. By 1984, office uses will represent 60 percent of space in the C-3 District, up from 57.5 percent in 1981. The growth of office space 1981-1984 represents a 12 percent increase./30/ Retail space, transient hotels, and housing also will show some growth. Space in residential hotels will not change and there will be a decline in space in the remaining three categories: cultural/institutional/educational/other, industrial/warehouse/automotive and parking.

The greatest change in space by subarea will occur in Subarea 1, where the amount of space will increase by 12 percent from 1981 to 1984. Almost all of this growth will be office space. Changes in the other subareas will be relatively small. There will be some increase in office space in Subareas 2, 3, and 5 and growth of retail space in Subarea 6. There is no new construction underway in either Subarea 4 or Subarea 7.

TABLE IV.B.6: C-3 DISTRICT SPACE BY USE AND SUBAREA, 1984(a) (Thousands Of Gross Sq. Ft.)

	Subarea								
Use	1	2	3	4	5	6	7	Total C-3 District	Percent of Total
Office(b)	42,666	4,369	1,422	4,635	2,877	4,710	1,395	62,074	60.0%
% of C-3 Total	68.7	7.1	2.3	7.5	4.6	7.5	2.3	100.0%	
Retail	2,096	207	430	415	1,021	3,438	613	8,220	7.9%
% of C-3 Total	25.5	2.5	5.2	5.1	12.4	41.8	7.5	100.0%	
Transient Hotel	1,921	--	249	31	5,024	2,436	61	9,722	9.5%
% of C-3 Total	19.8	--	2.6	0.3	51.7	25.0	0.6	100.0%	
Residential Hotel	160	--	162	74	2,205	194	53	2,848	2.7%
% of C-3 Total	5.6	--	5.7	2.6	77.4	6.8	1.9	100.0%	
Housing	162	12	831	276	2,167	-	730	4,178	4.0%
% of C-3 Total	3.9	.3	19.9	6.6	51.8	-	17.5	100.0%	
Cultural/Institutional Educational/Other	1,035	150	871	183	2,179	823	879	6,120	5.9%
% of C-3 Total	16.9	2.5	14.2	3.0	35.6	13.4	14.4	100.0%	
Industrial/Warehouse/ Automotive	136	568	2,141	96	1,116	29	42	4,128	4.0%
% of C-3 Total	3.3	13.8	51.9	2.3	27.0	0.7	1.0	100.0%	
Parking	1,046	1,079	1,643	299	1,227	856	108	6,258	6.0%
% of C-3 Total	16.7	17.2	26.3	4.8	19.6	13.7	1.7	100.0%	
TOTAL	49,222	6,385	7,749	6,009	17,816	12,486	3,881	103,548	100.0%
Percent of Total	47.5%	6.2%	7.5%	5.8%	17.2%	12.1%	3.7%	100.0%	

(a) Space assumed to be constructed in 1982-84 has been added to the 1981 inventory, space on these sites in 1981 removed, and projected conversion of space included. Estimated net changes in space 1981-84 are reflected by the differences between the figures in Table IV.B.1 and the figures shown here.

(b) Non-office uses, such as retail and parking, located in office buildings are not included in estimates of office space, but are included in their respective space use categories.

SOURCE: Recht Hausrath & Associates

IMPACT

Introduction

Approach and Perspective

The Downtown Plan proposes policies designed to redirect the location of major office development, to preserve the scale, character, and architecturally significant resources of portions of the C-3 District, to assure that future development is compatible with surrounding buildings and meets certain standards, and to enhance the quality of the downtown area with sunlight, open space, and public art.

To meet these objectives, the Plan proposes a set of policies and rules to govern future development in the C-3 District. These rules directly affect the cost of development, the size of new buildings, and the availability of sites for development in the C-3 District. Analysis was done to estimate the potential supply of space and to test the economic feasibility of development under the proposed policies of the Plan./31/

The amount of space eventually built under the Plan and the locations and types of C-3 District development, however, depend on the demand for space exerted by businesses and on how that demand responds to the supply conditions of the Plan. Thus, the potential supply of newly developed space was "matched" with the demand for space to accommodate potential future C-3 District employment growth. This process was done from the perspective of businesses of various types, evaluating how each would respond to various supply conditions (locations within the C-3 District, types of space, rents) based on their preferences for a C-3 District location relative to other location options./32/ Although the main focus was on business tenants as those who demand C-3 District space, consideration was also given to the responses of landowners, developers, and lenders (financial institutions) to Plan policies, both initially and over the long term.

The office market received the most detailed scrutiny. The demand for office space was forecast for ten subgroups, each with different characteristics as to locational preferences and ability and willingness to pay rent. This demand was matched with the potential supply of office space in each of the subareas of the C-3 District. When the supply of space in preferred locations was scarce, relative to demand, the characteristics of the demand subgroups and the nature of the potential supply in less preferable areas were the basis for judgments as to which demand subgroups would (1) secure space in the preferred location, (2) accept other locations in the C-3 District, or (3) choose to locate elsewhere.

Analysis of the non-office uses was less detailed although it considered many of the same types of factors. The forecasts of retail development considered the effect of office growth on retail sales forecasts, the importance of locations in the established retail areas and of those accessible to the growing office worker population, the typical mix of retail uses in office buildings and how those proportions vary by subarea, as well as the potential for increased retail activity in existing space. The availability of suitable sites in preferred locations was a major consideration for transient hotel development as was the size and cost of allowable new hotel development.

For other non-residential downtown uses (cultural/institutional/educational/other, industrial/warehouse/automotive, and parking), the locations of existing space, by subarea, and the competition for sites from other uses were the principal market considerations. For housing, the demand for high density downtown housing was considered along with the competition for C-3 District sites from other uses.

For all land uses, the approach was comprehensive in considering the use of existing space as well as the potential for development. Changes in land use over time were forecast to arise from the construction of new space, the demolition of existing space, the conversion of existing space from one use to another, the upgrading of existing space remaining in the same use, and the increased density of employment in existing space. Although much of the concern about downtown growth focuses on new development, changes in the use of existing space can provide significant opportunity for growth because of the large amount of existing space relative to the amount of space in projects newly constructed over a five or ten year period.

The forecasts of future land use and real estate development that are presented in this section describe the likely future outcome of both the potentials for supplying space under the Downtown Plan and the demand for C-3 District space. These forecasts of development and land use are consistent with the forecasts of business activity and employment presented in the next section (Section IV.C). In fact, land use/real estate development and business activity/employment describe two aspects of the same scenario for future growth./33/ It is important to read both sections to obtain a full description and understanding of future C-3 District growth. These forecasts provide the basic scenario for evaluating impacts in many of the other sections of this EIR, as well as for the consideration of real estate, land use, business and employment impacts.

In this section, land use and real estate market impacts are evaluated from several perspectives. One perspective is that of future land use. Impacts are described in terms of the amount of space and development in the C-3 District and of changes in the mix of uses and character of each C-3 District subarea. A related issue from the land use perspective includes areas outside the C-3 District, specifically whether the Downtown Plan would affect land uses and development patterns in other areas.

A second perspective is that of how the real estate market is likely to respond to new types of policies proposed in the Plan, specifically those involving the transfer of development rights for purposes of retaining architecturally significant buildings and providing open space. An important aspect of future real estate development involves evaluation of how these Plan policies are likely to work and to affect the amount and pattern of future development.

A third perspective is that of downtown property owners. Impacts are identified as the effects of the Plan on C-3 District building values and land values. C-3 District rents are described in this section from the perspective of their role in the process of land use change and as part of the explanation for effects on property values. The impacts of rents are considered in the business and employment impact section from the perspective of businesses of various types who are current or prospective future tenants for C-3 District space. (See Section IV.C, Business and Employment Impact.)

Timing of Impacts

If the Downtown Plan is adopted in 1984, it will have an effect on the real estate market during the 1984 to 1990 period. However, much of the actual land use change forecast for this six-year period will occur because of decisions which were made before the Plan was adopted. Only towards 1990, and beyond, will the consequences of decisions made after 1984 be evidenced in land use changes in the downtown area./34/ Thus, the forecasts for the 1990 to 2000 period provide a better indication of the actual land use implications of the Plan. Because of the long term implications of the Plan, a more qualitative discussion of impacts beyond 2000 has been included.

There are several reasons for the long term nature of land use impacts. One is that as of August 25, 1983, the date of release of the Downtown Plan, there were a number of approved projects for the C-3 District which had not yet been built, as well as an approved plan for the Yerba Buena Center Redevelopment Project Area (YBC). A second reason concerns the time needed to develop a large office building project. A typical schedule requires two years for formal review and planning for construction, three years for construction, and at least one additional year to full occupancy. Thus, under the shortest time frame, projects approved in late 1984 after adoption of the Plan would typically not be occupied until 1988. Projects beginning formal review in 1984 would not be occupied until 1990. A third factor is that it will take some time for the real estate market to adjust to the new policies./35/

C-3 District Boundary Changes

The Downtown Plan proposes changes in the boundaries of the geographic area included within the total C-3 District and changes in the specific use district designations (C-3-G or C-3-R, for example) for some lots within the C-3 District. These changes are identified in Figure III.1 and are described in detail in the Downtown Plan./36/

Regarding the total area within the C-3 District, the Plan proposes that two areas be removed from the present C-3 District: (1) the predominantly residential North of Market - Tenderloin area of Subarea 5 would be reclassified as the North of Market Mixed Use District (NOM/MUD); and (2) portions of Chinatown (Subarea 7 and a small part of Subarea 1) would be included in a new special use district to be developed for all of Chinatown. Policies governing new development in these areas would be evaluated and adopted as separate efforts from the Downtown Plan and this EIR./37/ The Plan also proposes that selected residential parcels be removed from the C-3 District and rezoned to RM-4 or RC-4 and that certain publicly-owned parcels in public use be rezoned to P (Public).

To preserve comparability between the Downtown Plan EIR and the evaluation of other C-3 District Alternatives which do not propose similar boundary changes, future land use is described for the areas within the current C-3 District. This is the study area that is described in the Land Use Setting section. Thus, throughout this EIR, references to the "C-3 District" in the text and in the tables refer to the geographic area within the C-3 District under current Planning Code rules and not to only those lots that would still be in the C-3 District under the Downtown Plan.

In this report, no new development beyond that in projects already approved has been forecast for the NOM/MUD or Chinatown because 1) future development would be subject to new policies which have not yet been adopted and 2) the general intent of excluding these areas from the C-3 District is to maintain their existing character. However, some small changes from 1984 employment and space have been included when such changes appear likely to occur under any future zoning for these areas. The specific treatment of each area is described in the appropriate subsections which follow. Future changes in land use on the parcels to be rezoned to RM-4, RC-4, or P are assumed to be subject to the policies of these proposed zoning categories.

In addition to changes in the boundaries of the C-3 District, the Plan proposes changes in the C-3 use district designations for some parcels. These include: (1) changes to designate the YBC Redevelopment Project Area as an individual zoning district (C-3-YBC) separate from C-3-0 (Subarea 1), C-3-R (Subarea 6), and C-3-S (Subareas 2 and 3); (2) changes of some lots in Subarea 5 from C-3-G to C-3-R, and of some lots in Subarea 6 from C-3-R to C-3-G; and (3) the addition of small portions of Subarea 7 to C-3-0 and C-3-R.

All of these proposed changes in zoning were assumed in developing the forecasts of future land use and real estate development. However, the boundaries of the seven subareas which reflect the current use districts were not changed to be consistent with the proposed use district boundaries in the Plan. Thus, the forecasts accurately reflect the growth allowed under the policies of the Plan. However, the pattern of future land use as described by the totals for subareas does not always reflect totals that would apply for the use district boundaries proposed in the Plan. Generally, the differences are small./38/

1990 C-3 District Land Use And Real Estate Development

Approved Projects, YBC, And Other Development

A number of C-3 District projects that will not be constructed until after 1984 were already approved as of August 25, 1983, the date of release of the Downtown Plan./39/ In addition, there is an approved redevelopment plan for the Yerba Buena Center Redevelopment Project Area (YBC), a portion of which is in the C-3 District./40/ Approved projects that will not be ready for occupancy until after 1984 and new development in the Yerba Buena Center Main Program Alternative are assumed to be built by 1990. Table IV.B.7 identifies the amount of new space in these projects, by type of building./41/

Approved projects to be completed from 1984 to 1990 include about 8.1 million sq. ft. of new space. Most of this space (72 percent) will be developed in office building projects. The remainder will be in transient hotels and residential projects. The new space in YBC represents an additional 5.4 million sq. ft. and includes a variety of different building types.

How fast the space in approved projects and in YBC will be built and occupied is to a large extent determined by the demand for space exerted by businesses. Forecasts of the demand for C-3 District space to accommodate employment growth were prepared as a part of this study./42/ These forecasts indicate that the demand for office space by 1990 would exceed the space that will be available as a result of the construction of approved projects and of projects planned for YBC. The 1990 demand for space for other uses could be met by the space in approved projects and in YBC. The process of "matching" the demand for space with potential supply accounts for the newly built space, for space demolished for new construction, for the conversion of some existing space to office use, and for the oversupply of newly built space as of 1984 which will be available for occupancy in the 1984-1990 period./43/

TABLE IV.B.7: AMOUNT OF SPACE TO BE BUILT IN THE C-3 DISTRICT BY TYPE OF BUILDING, 1984-1990 (Thousands of Gross Sq. Ft.) (a)

Building Type	Space in Projects Approved As of August 25, 1983 And Not Under Construction By Mid-1982 (b)	Space Planned For Yerba Buena Center (c)	Space In Other Projects (d)	Total Space Built 1984-1990
Office (e)	5,780	1,790	2,300	9,870
Retail (f)	--	360	---	360
Transient Hotel	1,810	1,000	---	2,810 (g)
Housing (h)	460	630	---	1,090 (i)
Cultural/Institutional/Educational/Other	--	570	---	570
Parking	--	1,030	---	1,030
TOTAL	8,050	5,380	2,300	15,730

NOTE: Projects under construction in mid-1982 and to be completed before or during 1984 are included in the 1984 setting.

TABLE IV.B.7: AMOUNT OF SPACE TO BE BUILT IN THE C-3 DISTRICT BY TYPE OF BUILDING, 1984-1990 (Thousands of Gross Sq. Ft.) (a) (Continued)

(a) The figures are total new space without allowance for demolition.

(b) Space in projects that would not be fully constructed and ready for occupancy until after 1984 and that were already approved as of August 25, 1983, the date of release of the Downtown Plan. See note 41.

(c) Includes uses planned for the portion of the Yerba Buena Center Redevelopment Project Area (YBC) that is in the C-3 District; uses are as defined by the YBC Main Program Alternative.

(d) Space in projects to be approved after August 25, 1983 could include space in projects already under review by the Department of City Planning as of August 25, 1983 and space in projects to be proposed in late 1983 and 1984.

(e) Space in office buildings includes space for office and retail uses in office buildings.

(f) Space in free-standing retail buildings only; does not include retail use in new office buildings.

(g) 4,340 hotel rooms.

(h) Housing includes space in solely residential projects and housing space in office building projects.

(i) 1,380 housing units.

SOURCES: Department of City Planning, San Francisco Redevelopment Agency, and Recht Hausrath & Associates

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The employment forecasts indicate that an additional 2.3 million sq. ft. of space in office buildings could be absorbed if it were built by 1990. The 1990 space forecasts in this EIR assume that this additional amount of space would be developed (see Table IV.B.7). This additional space would be in projects approved after August 25, 1983. As of that date, there were a number of sites with projects under review by the Department of City Planning. The 2.3 million sq. ft. could be provided in projects eventually approved on these sites and/or in projects on other sites which are proposed in late 1983 and in 1984./44/

If the development forecast for 1984 to 1990 is not achieved, it is probable that less space would actually be built and occupied by 1990 than is forecast in this EIR. The main reason is that by 1990 under the policies of the Plan, some demand may shift to space outside the boundaries of the C-3 District, resulting in less employment growth and less demand for space within C-3 District boundaries. As described later for the 1990-2000 period, the Plan would affect the location options available to businesses and would result in higher rents for C-3 District office space in both new and existing buildings. While these effects would be recognized by 1990, it is difficult to determine if they would affect the overall amount of space built and occupied by that time./45/ If the Plan were to affect the amount of C-3 District office space built by 1990, it would affect the amount built near the end of the 1984-1990 period after the space in already approved projects is constructed. In that situation, the 2.3 million sq. ft. of space in office buildings added to the total for already approved projects and YBC might be lower, perhaps between one and two million sq. ft.

The major factor determining if the 1990 forecast will be achieved is the demand for space under the supply conditions of the Plan, not the ability to physically construct the forecast amount of space. There were over two million sq. ft. of space in office building projects that were under review (and not yet approved) by the Department of City Planning as of August 25, 1983. Even if these projects were to be modified under the Plan, projects on these sites could provide much of the 2.3 million sq. ft. of new space. A moratorium on the approval of C-3 District projects during the review period of the proposed Plan could affect the timing for development of some of these projects but is unlikely to have a large effect on the total amount of office building construction by 1990./46/ The significance of the moratorium on the office space market depends on two factors. First, it depends on the extent to which projects already under review would be exempt from the moratorium. Exemptions would allow additional projects to be approved in 1983 and 1984 and built by 1990. The second factor concerns the duration of a moratorium and whether the project review process would continue during the moratorium. If the moratorium lasted about one year and the review process was ongoing, project approval would resume by late 1984. Since it generally takes about three years for the construction of large office buildings, projects approved in 1984/85 could be built by 1990. Thus, it is assumed that over two million sq. ft. of space in office buildings could be approved and built by 1990 even with a moratorium.

Space Use

Table IV.B.8 shows the total space in the C-3 District in 1990 by use and subarea. The 1990 forecasts shown here incorporate space existing at the end of 1984 (see Table IV.B.6), plus space constructed in the 1984-1990 period, less space demolished to allow for new construction. The totals also reflect the projected conversion of some space to office use over the 1984 to 1990 period./47/ The net changes in C-3 District space account for all of these factors and are summarized in Tables IV.B.9 through IV.B.11 along with forecast changes for the 1990 to 2000 period./48/

The net increase in total C-3 District space in all use categories from 1984 to 1990 is projected to be 12.2 million sq. ft. This represents an increase of 11.8 percent from the 1984 total.

Office Space. The amount of space constructed in new office buildings over the six-year period would be 9.9 million sq. ft. (see Table IV.B.7). This amount is equal to an average of 1.6 million sq. ft. per year. This rate for the C-3 District is very similar to the historical rate of new office development from 1965 to 1981 (1.7 million sq. ft. for the total City and 1.5 million sq. ft. for the C-3 District), but it is less than the high annual average construction in the C-3 District for the 1981-1984 period (2.5 million sq. ft. per year). Nevertheless, it may be considered a strong rate of growth reflecting the profitability of downtown office development and the growth of business activities which occupy office space.

When adjustments are made for demolition, conversion, and the occupancy of some space in office buildings by other uses, the net increase in space occupied by office uses 1984-1990 is 8.4 million sq. ft. (see Table IV.B.11), an increase of 13.6 percent over this period./49/ Conversions to office space from space in other uses account for about 10 percent of this increase.

TABLE IV.B.8: C-3 DISTRICT SPACE BY USE AND SUBAREA, 1990(a) (Thousands Of Gross Sq. Ft.)

Use	Subarea 1	2	3	4	5	6	7	Total C-3 District	Percent of Total
Office(b)	48,561	5,093	1,793	4,654	3,185	5,662	1,544	70,492	60.9%
% of C-3 Total	68.9	7.2	2.6	6.6	4.5	8.0	2.2	100.0%	
Retail	2,434	241	522	415	1,039	3,687	611	8,949	7.7%
% of C-3 Total	27.2	2.7	5.8	4.7	11.6	41.2	6.8	100.0%	
Transient Hotel	1,921	--	249	31	6,837	3,436	61	12,535	10.8%
% of C-3 Total	15.3	--	2.0	.3	54.5	27.4	.5	100.0%	
Residential Hotel	147	--	162	74	2,205	194	53	2,835	2.4%
% of C-3 Total	5.2	--	5.7	2.6	77.8	6.8	1.9	100.0%	
Housing	505	342	831	276	2,185	300	834	5,273	4.6%
% of C-3 Total	9.6	6.5	15.8	5.2	41.4	5.7	15.8	100.0%	
Cultural/Institutional Educational/Other	889	125	1,286	183	2,136	521	858	5,998	5.2%
% of C-3 Total	14.8	2.1	21.4	3.1	35.6	8.7	14.3	100.0%	
Industrial/Warehouse/ Automotive	103	431	1,716	77	905	21	32	3,285	2.8%
% of C-3 Total	3.1	13.1	52.2	2.4	27.5	.7	1.0	100.0%	
Parking	936	1,043	1,712	299	1,148	1,186	99	6,423	5.6%
% of C-3 Total	14.6	16.2	26.7	4.6	17.9	18.5	1.5	100.0%	
TOTAL	55,496	7,275	8,271	6,009	19,640	15,007	4,092	115,790	100.0%
Percent of Total	47.9	6.3	7.1	5.2	17.0	13.0	3.5	100.0%	

(a) 1990 space includes space in the 1984 setting and changes estimated for 1984-1990: space assumed to be constructed, space demolished, changes in use of space (conversions).

(b) Non-office uses, such as retail, located in office buildings are not included in the estimates of space in office use, but are included in their respective space use categories.

Seventy percent of this office development is projected to occur in the Central Office area, Subarea 1. This is similar to the share of total C-3 District office space in Subarea 1. There is some increase in office space forecast for all the other subareas, with the largest increases in Subareas 6 and 2 and only very small increases in Subarea 4 and 7.

Retail and Hotel Space. The forecast net addition of retail space in the C-3 District, 730,000 sq. ft., is an increase of nine percent over the 1984 total. The majority of the new retail space would be in the Central Office area (Subarea 1) and around Union Square (Subarea 6). Forty-six percent of the net additional space would be provided in Subarea 1, mostly as a part of new office buildings. The new space in Subarea 6, 34 percent of the total, would be provided in large retail and mixed-use projects.

Between 1984 and 1990, 4,340 transient hotel rooms are projected to be added in the C-3 District./50/ The total number of new rooms is equivalent to about 2.8 million sq. ft. of additional hotel space, representing an increase of about 25 percent over 1984. All of the new hotel development would occur in the Tenderloin and Union Square areas, Subareas 5 and 6, where most of the existing hotel space in the C-3 District is located.

It is important to note that the list of approved and YBC projects contains an unprecedented number of major hotel projects. The large number of new hotel rooms reflects the large increases in room rates and the high occupancy which occurred in the 1976-1980 period. This surge in supply is also partially a response to the completion of the Moscone Convention Center and expectations that convention and tourist activity in the City and the downtown area will increase in the years ahead. The annual rate of hotel development during this period is not likely to be matched after 1990. Depending on the duration of the recession of the early 1980's, the new hotel development forecast here could occur over a longer time period, in which case the 1984-1990 addition of hotel rooms would be slightly less and the 1990-2000 growth could be somewhat greater than shown in this EIR./51/

Residential and Other Uses. About 1,380 new housing units are included in approved and YBC projects in the C-3 District. About three-quarters are in Yerba Buena Center. A small amount of residential hotel space is expected to be demolished for new construction in YBC, so that the net change in residential use would be slightly less (about one percent) than the new housing constructed. The new housing in YBC offsets the loss of the small number of residential hotel units and adds more housing to the downtown area south of Market Street.

Space in the cultural/institutional/educational/other use category is projected to decline by about two percent in the C-3 District by 1990. The cultural center, ballroom, and educational/meeting room space to be constructed in YBC, plus the additional space to be occupied by these uses in older office buildings (most by educational or non-profit uses), would be offset by the projected loss of space in the "other" space category. Most of this loss (85 - 90 percent) would be space demolished for new construction and could include a large share of currently vacant space. A smaller share would be in buildings converted to office use.

Space in industrial/warehouse/automotive uses is projected to decrease in the C-3 District by 840,000 sq. ft., a decline of about 20 percent. Most of this change would represent conversions of existing space to office use. In terms of net change, parking space in the C-3 District would increase by only a small amount. The large addition of parking in YBC would just about offset other parking lost, largely in YBC, to make way for new construction.

2000 C-3 District Land Use And Real Estate Development

Forecasts for the Downtown Plan indicate that by 2000, there would be about 125 million sq. ft. of space in the C-3 District. Table IV.B.9 presents space in 2000 by land use category and subarea./52/ Over 60 percent of this space would be in office use. The uses with the next largest amounts of space would be transient hotels (11 percent) and retail shops and restaurants (about eight percent).

TABLE IV.B.9: C-3 DISTRICT SPACE BY USE AND SUBAREA FOR THE DOWNTOWN PLAN, 2000(a)
(Thousands Of Gross Sq. Ft.)

	Subarea							Total	Percent
Use	1	2	3	4	5	6	7	C-3 District	Of Total
Office(b)	52,276	7,538	2,424	4,998	4,104	5,941	1,608	78,889	63.0%
% of C-3 Total	66.3	9.6	3.1	6.3	5.2	7.5	2.0	100.0%	
Retail	2,509	365	552	427	1,109	4,059	611	9,632	7.7%
% of C-3 Total	26.1	3.8	5.7	4.4	11.5	42.1	6.4	100.0%	
Transient Hotel	2,161	225	409	31	7,497	3,736	61	14,120	11.3%
% of C-3 Total	15.3	1.6	2.9	0.2	53.1	26.5	0.4	100.0%	
Residential Hotel	147	--	162	74	2,205	194	53	2,835	2.2%
% of C-3 Total	5.2	--	5.7	2.6	77.8	6.8	1.9	100.0%	
Housing	755	342	876	321	2,365	300	884	5,843	4.7%
% of C-3 Total	12.9	5.9	15.0	5.5	40.5	5.1	15.1	100.0%	
Cultural/Institutional Educational/Other	877	85	1,286	183	1,934	307	817	5,489	4.4%
% of C-3 Total	16.0	1.6	23.4	3.3	35.2	5.6	14.9	100.0%	
Industrial/Warehouse/ Automotive	94	255	1,461	21	542	6	9	2,388	1.9%
% of C-3 Total	3.9	10.7	61.2	0.9	22.7	0.2	0.4	100.0%	
Parking	875	956	1,586	269	1,112	1,150	99	6,047	4.8%
% of C-3 Total	14.5	15.8	26.2	4.5	18.4	19.0	1.6	100.0%	
TOTAL	59,694	9,766	8,756	6,324	20,868	15,693	4,142	125,243	100.0%
Percent of Total	47.7	7.8	7.0	5.0	16.7	12.5	3.3	100.0%	

(a) 2000 space includes 1990 space and changes estimated for 1990-2000: space constructed, space demolished, and changes in the use of space (conversions).

(b) Non-office uses, such as retail, located in office buildings are not included in the estimates of space in office use, but are included in their respective space use categories.

SOURCE: Recht Hausrath & Associates

Space by use and changes in space by use are summarized in Tables IV.B.10 and IV.B.11. The net increase in total C-3 District space in all use categories from 1990 to 2000 is projected to be 9.5 million sq. ft. This would be an increase of 8.2 percent over this ten-year period. In total, the space forecasts for the C-3 District under the Downtown Plan indicate a net increase of 21.7 million sq. ft. from 1984 to 2000. This growth would represent an increase of 21 percent from the 1984 setting to the year 2000.

The pattern of land use change over time differs among the C-3 District use categories. Space in office, hotel, retail, and housing uses would increase over time. The amount of C-3 District space in the other use categories would decline. The following subsections describe the C-3 District forecasts for each land use.

The reader is reminded that the net changes in land use summarized in Table IV.B.11 account for new construction, demolition of existing space, and conversions of space from one use to another. Supplemental tables at the end of Appendix G show the net changes in space by use in terms of each of these components.

Throughout the following discussions, the forecasts are for the C-3 District since that is the area most directly affected by the Downtown Plan. Possible affects on development and land use outside the C-3 District were also considered. The rest of the City and the region are discussed separately, later in this impact section.

Office Space

Under the Downtown Plan, office building construction in the C-3 District is forecast to be 8.4 million sq. ft. from 1990 to 2000 (see Table IV.B.12). This would represent annual average construction of 840,000 sq. ft. per year. This average rate of major office construction would be lower than rates of development for previous periods (about half the annual rate 1984-1990). It would represent a slowing of office development in the C-3 District.

TABLE IV.B.10: C-3 DISTRICT SPACE BY USE FOR THE DOWNTOWN PLAN, 1981, 1984, 1990, AND 2000
(Thousands of Gross Sq. Ft.)

	Setting		Downtown Plan	
Use	1981	1984	1990	2000
Office	55,328	62,074	70,492	78,889
Retail	7,756	8,220	8,949	9,632
Transient Hotel	9,222	9,722	12,535	14,120
Residential Hotel	2,848	2,848	2,835	2,835
Housing	4,080	4,178	5,273	5,843
Cultural/Institutional/ Educational/Other	6,318	6,120	5,998	5,489
Industrial/Warehouse/ Automotive	4,465	4,128	3,285	2,388
Parking	6,351	6,258	6,423	6,047
TOTAL	96,368	103,548	115,790	125,243

SOURCE: Recht Hausrath & Associates

TABLE IV.B.11: CHANGES IN C-3 DISTRICT SPACE BY USE FOR THE DOWNTOWN PLAN, 1981-2000

	Change 1981-1984		Change 1984-1990		Change 1990-2000		Change 1984-2000	
Use	Thousands Of Gross Sq. Ft.	Percentage	Thousands Of Gross Sq. Ft.	Percentage	Thousands Of Gross Sq. Ft.	Percentage	Thousands Of Gross Sq. Ft.	Percentage
Office	6,746	12.2%	8,418	13.6%	8,397	11.9%	16,815	27.1%
Retail	464	6.0%	729	8.9%	683	7.6%	1,412	17.2%
Transient Hotel	500	5.4%	2,813	28.9%	1,585	12.6%	4,398	45.2%
Residential Hotel	0	0.0%	(13)	-0.5%	0	0.0%	(13)	-0.1%
Housing	98	2.4%	1,095	26.2%	570	10.8%	1,665	39.9%
Cultural/Institutional/Educational/Other	(198)	-3.1%	(122)	-2.0%	(509)	-8.4%	(631)	-10.3%
Industrial/Warehouse/Automotive	(337)	-7.5%	(843)	-20.4%	(897)	-27.3%	(1,740)	-42.2%
Parking	(93)	-1.5%	165	2.6%	(376)	-5.9%	(211)	-3.4%
TOTAL	7,180	7.5%	12,242	11.8%	9,453	8.2%	21,695	21.0%

SOURCE: Recht Hausrath & Associates

TABLE IV.B.12: C-3 DISTRICT OFFICE BUILDING CONSTRUCTION BY SUBAREA FOR THE DOWNTOWN PLAN, 1981-2000

	Subarea							Total C-3 District	Annual Average Construction
	1	2	3	4	5	6	7		
Space In New Office Buildings (Thousands of Gross Sq. Ft.)									
1981 - 1984	6,624	339	335	--	120	--	--	7,418	2,473
1984 - 1990	7,733	679	34	--	297	995	130	9,868	1,645
1990 - 2000	4,500	2,500	400	300	400	300	--	8,400	840
1984 - 2000	12,233	3,179	434	300	697	1,295	130	18,268	1,142
Percentage Distribution By Subarea (Percentage)									
1981 - 1984	89.3	4.6	4.5	--	1.6	--	--	100.0%	
1984 - 1990	78.4	6.9	0.3	--	3.0	10.1	1.3	100.0%	
1990 - 2000	53.6	29.8	4.7	3.6	4.7	3.6	--	100.0%	
1984 - 2000	67.0	17.4	2.4	1.6	3.8	7.1	0.7	100.0%	

SOURCE: Recht Hausrath & Associates

The use of existing C-3 District space for office activities would increase in relative importance for accommodating office growth. Compared to past patterns, there would be increases in the conversions of existing buildings to office uses, increased remodeling and upgrading of existing buildings including the addition of penthouse spaces, and more intensive use of existing office space through higher employment densities.

In total, by 2000, the C-3 District is forecast to have about 79 million sq. ft. of office space (see Table IV.B.10). The net addition of office space, accounting for new construction, demolitions, conversions, and the occupancy of some space in new office buildings by other uses, would be 8.4 million sq. ft. from 1990 to 2000 (see Table IV.B.11)./53/ This would represent a 12 percent overall increase in office space during these 10 years. Conversions would provide about 13 percent of this increase in space, having provided 10 percent of office space growth 1984-1990. Over the entire period from 1984 to 2000, C-3 District office space would increase 16.8 million sq. ft. or by 27 percent (see Table IV.B.11).

Effects of Plan Policies. Many of the policies proposed in the Downtown Plan would have an effect on C-3 District office development. These effects fall into two major categories.

First, there are policies to redirect the location of major office development and to preserve the scale, character, and historic resources of portions of the C-3 District. In combination, the FAR, height/bulk, sunlight access, and preservation policies would be effective in meeting these goals./54/ The importance of these policies is in their effects on the size of new buildings and on the availability and feasibility of sites for development.

These Plan policies would limit the westward expansion of major office buildings into the Kearny Street corridor, beyond Kearny Street into the retail district itself, and further north into portions of Chinatown. Within the traditional financial district to the north of Market Street, the Plan would reduce development potential, particularly in the vicinity of the remaining older buildings and smaller scale existing uses. The Plan would also limit development west along Market Street except for selected areas with higher heights. Overall, the Plan would reduce opportunities for new development in the north of Market areas which are the locations most preferred by office activities. Because they are effective in preserving the existing scale, character and significant buildings, the Plan's policies limit development on many of the sites with the most remaining development potential (those with small existing buildings in the most preferred areas).

The Plan seeks to redirect major office growth south of Market Street, primarily into the southerly portions of Subarea 1 and into Subarea 2. Development opportunities in these areas are enhanced by the relatively high heights which encourage large buildings through the use of transferable development rights (TDRs) from the sites of architecturally significant buildings retained in other areas./55/ The office market is already moving in a southerly direction as evidenced by the major projects recently constructed or approved between Market and Mission Streets, and south to Howard Street in the blocks east of Beale Street. Planned development in YBC would reinforce this south of Market trend.

Secondly, there are other policies which would also influence future office development. These would be the policies that directly affect the costs of development, including the building design, form, and appearance provisions of the Plan and the requirements for public art and open space. It was estimated that these provisions would result in six to 10 percent higher construction costs compared to the costs for typical box-shaped highrise buildings./56/ Higher costs of development have implications for the feasibility of office development.

Implications For Project Feasibility And The Rate Of Office Development. There are important distinctions between C-3 District locations which would influence the achievement of the Plan's goals. In particular, the types of office uses and the rents paid for office space north of Market Street, just south of Market to Mission Street, and beyond Mission to Folsom Street into Subarea 2 vary considerably. Differences in obtainable rents have implications for the feasibility of new office projects. In turn, feasibility considerations will determine the timing and success of the Plan's strategy to redirect office growth.

There are many office tenants with strong preferences for locations north of Market Street who are willing and able to pay high rents for these locations. These demand conditions continue to support high rents which, in turn, make large scale new development economically feasible.

The more southerly locations of the C-3 District in Subarea 2 do not now serve the same types of office tenants. Rents for space are lower in these locations. Most office tenants in these locations now include smaller firms and the larger-space-using functions of large firms; both types of tenants are unwilling or unable to pay the rents needed to compete for the northern locations. At current rent levels in Subarea 2, large highrise development is not feasible. In fact, the economics currently would support lower-rise construction on some sites, but not the large buildings desired to create the demand for TDRs in the Special Development District./57/ The major reasons are that larger, taller buildings cost more per square foot to construct than lower-rise structures, and have a higher proportion of non-rentable space (e.g. elevator cores).

Locations in the south of Market portions of Subarea 1 fall in-between these two situations. Location preferences and competion for these sites do not support as high rents as north of Market locations. However, rents have been increasing and are high enough to support highrise office construction.

The Plan strategy to redirect office development in a southerly direction would speed up the transition of the C-3 District areas south of Market Street east of YBC. However, it would take time for the market to fully adjust to this redirection. Because of the distinctions made by office tenants, locations south of Market (particularly in Subarea 2) to which development is to move are not directly substitutable for the north of Market locations to be preserved. The Plan strategy would require that tenants reevaluate their locational preferences, specifically as to location and type of space relative to price. This reevaluation occurs relatively slowly as leases expire, as businesses expand and contract, and as outside firms consider a C-3 District location.

The success of the Plan strategy would also involve developers, lenders, and property owners of historic buildings. Developers and lenders may be cautious, waiting for market evidence that demand will shift further south and that tenants will pay the higher rents needed for project feasibility (particularly in Subarea 2 locations). It will also take time for the owners of historic buildings to evaluate the effect and permanence of the preservation policies in deciding whether to sell TDRs. As a result, the rate of C-3 District office development would slow during this transition period.

When combined with the policies to redirect office growth, the higher construction costs under the Plan would add to the factors contributing to slower rates of development in the C-3 District. The main reason is that the developers would not immediately be able to match higher construction costs with higher rents in the areas to which future office development is to be directed.

In the north of Market areas, higher construction costs would be at least partly matched with higher rents. Location preferences are strongest in these areas, tenants are willing and able to pay high rents for these locations, and the types of tenants in these areas are the ones most willing to pay higher rents for higher quality space in a higher amenity environment. However, the availability of sites and relatively strict controls on the size of new development would reduce the rate of major new construction in these locations.

In the south of Market areas east of YBC and in more peripheral locations generally, higher construction costs could turn marginal projects into infeasible projects and could slow the timing of development by requiring that rents increase by a larger amount before development becomes feasible. Generally, higher construction costs would have more effect on the amount and timing of development in peripheral locations than in the central office core.

Considering all of these factors, the real estate analysis of Downtown Plan policies indicates that the redirection strategy would work and the office development forecasts reflect this conclusion. However, the analysis indicates that it will take time for the market adaptations to occur./58/ This is one of the reasons for the slower rate of office development forecast for the C-3 District during the 1990s compared to earlier periods. Actual development could be more than forecast here if this transition occurs more quickly.

Implications For Demand For New Development, Office Rents, And The Use Of Existing Space. The office development forecasts for the Downtown Plan also assume that as tenants reevaluate their needs for space relative to location options at various rents, some potential occupants would chose to locate outside the C-3 District and others would use existing C-3 District space more intensively./59/ Thus, reduced demand for C-3 District space under the Downtown Plan is the other reason for the slower office growth forecast between 1990 and 2000.

As the major office core continues to shift into the southern C-3 District areas, the locations for other office functions which are generally at the periphery of the downtown core shift outside the C-3 District. By shifting south, the area of downtown office activity expands beyond the boundaries of the C-3 District. Thus, in the future, less of the growth of downtown office activity would occur in the C-3 District as compared to past growth patterns. The activities involved are those which place less value on a central location and which are unwilling and unable to compete to be there (generally including smaller firms and larger-space-using functions).

In the process of reevaluating space needs, there are other potential C-3 District businesses which would choose a location outside of the redirected downtown office core and its periphery. These activities could end up elsewhere in San Francisco or in locations outside the City.

Overall, rents for C-3 District office space would increase over time. Because of fewer development opportunities in locations preferred by tenants willing and able to pay high rents, increased competition for available space in these locations would result in higher rents. Also, as the office core expands south, those areas within the C-3 District boundaries would obtain higher rents as the acceptability and role of these locations change. Given higher rents for C-3 District space, it is forecast that tenants would use existing space more intensely./60/ This change would reduce the demand for additional office space. Given the large amount of existing space, a relatively small change in employment densities could accommodate a relatively large amount of employment growth in existing space and reduce demand for additional space by a corresponding amount. For example, from 1990 to 2000, more intensified use of existing space to accommodate employment growth would be equivalent to about a 40 percent increase in the net addition of office space forecast for that period.

Similarly, pressures for conversions, remodeling, and additions to existing buildings would increase./61/ The forecasts assume that upgrading and small additions would occur, mostly north of Market where new development opportunities would be limited (Subareas 1, 6 and 7). Conversions would occur primarily in more outlying locations to provide a supply of relatively lower cost space.

Forecast Pattern of Office Development by Subarea. The 1990-2000 forecast of new office building construction (see Table IV.B.12) reflects the effectiveness of the Plan's policies to redirect the downtown development pattern. It is also indicative of a longer term trend in the development pattern, as sites north of Market Street become more scarce and Subarea 2 takes on the character of a new office center. In this 10 year period, only about one-half of all new C-3 District office construction would occur in Subarea 1. Previous patterns showed 80 and 90 percent of all new office construction occurring in this area, a percentage too large to be maintained indefinitely. The Plan would hasten the shift to some subareas, while it would also limit development opportunities in other potential expansion areas, such as Subarea 6 (Union Square) and Subarea 7 (Chinatown).

Under the policies of the Plan, Subarea 2 would absorb 30 percent of total new office construction between 1990 and 2000./62/ This would be the most dramatic change from previous development patterns. The change would be somewhat greater if the real estate market transition in Subarea 2 occurred more rapidly than projected for this EIR. Only a minimal amount of new office development would have taken place in this subarea prior to 1990. If, under the Plan, Subareas 1 and 2 are considered to be the core office area (whereas before the core would be limited primarily to Subarea 1), then the core would maintain its share (about 80 percent) of new C-3 District office building construction.

Another major change resulting from the Plan would be the reduction in the amount and percentage of new office construction in Subarea 6. The effect of the Plan's policies in this case would be to stop a new development pattern that has become evident in recent project proposals, and that would otherwise be likely to continue. The proportion of total new office building construction occurring in this subarea between 1990 and 2000 would be about two-thirds less than between 1984 and 1990.

Shifts in new office development that could not be accommodated in the prime office areas (due to construction costs and the availability of suitable sites) are also evident in the forecast development pattern. The percentage of office construction in Subareas 3 and 4 would increase substantially over that occurring in the 1984 to 1990 period (although the amounts of development would still be relatively small). The percentage in Subarea 5 would also increase.

The overall pattern of office activity in the C-3 District is also determined by the use of existing space, in terms of both conversions to office from other uses and the more intensive use of existing office space. The subarea pattern for conversions between 1990 and 2000 differs markedly from the pattern for new office construction. This is because the pattern for conversions depends on where suitable conversion space is located and not valued more highly as a new development site, and where demand for lower cost space is highest. Both of these factors point to the peripheral subareas; about one-half of all conversions would occur in Subarea 5 and another 20 percent would occur in Subarea 3./63/ There would be no conversions in Subarea 1 and the remainder would be spread fairly evenly among the other subareas (2, 4, 6 and 7).

The pattern for existing office space that would be used more intensively reflects historic C-3 District development patterns. Seventy percent of this supply factor would be provided in Subarea 1, since most existing office space is located in this subarea. The next largest percentage would be in Subarea 6 (eight percent). Thus, although new office construction in these areas is directly limited by the policies of the Plan, an indirect effect of those policies would be to stimulate more intensive use of existing space. This could occur either as existing businesses re-design their space to accommodate growth, instead of moving, or as businesses with higher employment densities replace those with lower densities, unwilling to pay the increased rents.

A sizeable amount of older office space in Subareas 5 and 6 would be upgraded to attract higher paying tenants (such as the upper floor space around Union Square). Although upgrading would not increase the amount of office space, it would result in a larger supply of improved office space. The proposed policy to limit individual office spaces to 10,000 sq. ft. or less in the C-3-R use district could affect the types of tenants there but would probably not discourage upgrading in most cases.

Retail Space

By 2000, retail space in the C-3 District under the Downtown Plan would total 9.6 million sq. ft. (see Table IV.B.9). About 42 percent of this space would be in the Union Square area, Subarea 6. The next largest amount, representing 26 percent of the total, would be in Subarea 1.

The net addition of C-3 District retail space would be 680,000 sq. ft. from 1990 to 2000, an increase of about eight percent (see Table IV.B.11). The new space would include a major department store, small shops and restaurants (many in expanded and remodeled space in existing buildings) and retail space in new office buildings. In total, from 1984 to 2000, a net increase of 1.4 million sq. ft. of retail space is forecast, an increase of 17 percent.

The majority of new retail space would be added in the major retail shopping areas of the C-3 District in Subarea 6. The next largest amounts would be added in new office buildings, most in Subareas 1 and 2. Other retail space would be added in Subarea 5 near Union Square, the theater district, and the major hotels, and in Subareas 2 and 3 near Yerba Buena Center and the areas of expanding office activities around the Transbay Terminal.

The Downtown Plan's effects on C-3 District retail activity are not like the Plan's effects on office space; the Plan would not directly affect the amount or the costs of new retail construction. The Plan's effects on retail space are indirect and would occur primarily through effects on employment growth and sales contributed by downtown workers, and on office building development and the space available for retail uses in new office buildings.

Growth of C-3 District retail space depends on the growth of retail sales attributable to the spending of downtown workers, tourists, City residents, and residents from elsewhere in the region. Generally, the policies of the Plan preserve and enhance the quality of the downtown retail district around Union Square. The combination of policies to preserve sunlight and the scale and character of existing buildings and businesses would be effective in retaining the attributes of this area which are important in attracting shoppers and supporting retail sales growth. Under the Downtown Plan, C-3 District retail sales are forecast to experience steady real growth from 1984 to 2000, at an annual rate of 2.2 percent per year.

The sales growth rate for the latter part of the forecast period (1990-2000) would be slower than that in the early years. This would be due to the indirect effects of the Plan on C-3 District retail activity. The average annual increase in office employment and tourist activity in the C-3 District would be somewhat less between 1990 and 2000 under the Plan than in preceding years. Thus, there would be less annual growth in spending from these sources to support increases in C-3 District retail activity. The annual rate of sales growth for the latter period would be 1.95 percent per year.

In addition to indirect effects on sales growth, Plan policies would have other indirect effects on the distribution of increased retail activity, both the distribution among subareas and the distribution between existing and newly built space. These impacts arise from the Plan's effects on the amount of new office development and the space available for retail uses in new office buildings.

The development forecasts assume that Plan policies regarding retail uses in new office buildings would be effective. As required, retail space would be provided on the ground floors of new buildings, and would consist primarily of smaller spaces designed to meet the convenience needs of nearby workers (and residents or tourists in some subareas). It is assumed that Plan policies would discourage additional, large retail projects designed to become major new shopping destinations in primarily office areas./64/

The development of smaller-scale convenience retail space in office buildings, combined with slower rates of office development and increased employment in existing office space,/65/ would result both in more growth of retail sales in existing retail space/66/ and in the addition of retail space through expansion and changes in use of lower floors in existing buildings./67/ The importance of sales growth in existing space is indicated by the following comparison: between 1990 and 2000, retail sales are forecast to increase 21 percent in real terms, while retail space would increase only eight percent. Remodeling and changes in use to accommodate increased retail activity would provide about 30 percent of the net additional retail space provided between 1990 and 2000.

Increases in retail activity in existing building space partly explain the distribution of the growth of retail space described near the beginning of this subsection. More of the growth of retail space occurs in Subareas 6, 5, 2, and 3 than would be justified based on both the potential locations for a new department store or large free-standing retail complex, and the locations of new office buildings with ground floor retail space. This is because the lower floors of existing buildings are forecast to be redesigned and remodeled for retail use and some uses are expected to change in existing buildings.

Hotel Space

By 2000, transient hotel space in the C-3 District under the Downtown Plan would total 14.1 million sq. ft. (see Table IV.B.9). Just over half of this space (53 percent) would be in Subarea 5. Most of the rest of the hotel space would be in Subarea 6 (27 percent) and Subarea 1 (15 percent). In total, there would be about 24,000 transient hotel rooms in the C-3 District in 2000.

The growth of C-3 District hotel space is forecast at 1.6 million sq. ft. from 1990 to 2000, an increase of 13 percent (see Table IV.B.11). This growth would represent the addition of about 2,800 hotel rooms./68/ Over the 16 years from 1984 to 2000, 4.4 million sq. ft. of hotel space are projected to be added in the C-3 District. This large addition would increase C-3 District hotel space by 45 percent.

Generally, the Downtown Plan would support the increase in tourism, conventions, and business travel downtown which is responsible for additional hotel development. The forecasts show strong hotel growth continuing in the C-3 District. The amount of hotel development from 1990 to 2000 is less than the amount to be built in the prior six years, primarily because of the unprecedented number of hotel projects already approved for construction from 1984 to 1990. That high rate of development is not expected to continue over the longer term.

Hotel development from 1990 to 2000 would be more dispersed than development for prior periods. Although the majority of hotel development would still occur in Subareas 5 and 6, a larger percentage of the growth would be built in other subareas. Overall, more of the growth would shift from areas north of Market to sites located south of Market Street. On the average, individual projects would be smaller in size than recent development. This pattern would result from the reduced availability of sites for hotel development by this time period and from the effects of Plan policies on the size and location of hotel projects.

In Subarea 6, the height limits under the Plan would restrict the construction of tall structures; preservation policies would reduce the sites available for development; and policies regulating the size of additional hotels would limit most hotel projects in this area to 200 rooms or less./69/ Thus, the hotel forecast includes two relatively small hotel projects in Subarea 6 from 1990 to 2000. One project of about 200 rooms is forecast to occur north of Market Street, perhaps in a remodeled existing building. A second project is anticipated in the blocks south of Market Street, closer to Yerba Buena Center. It is assumed that a somewhat larger project, perhaps 300 rooms, could be approved in this area./70/

The largest amount of C-3 District hotel growth is forecast for Subarea 5, about 650,000 sq. ft. in two larger projects. The plan encourages hotel and entertainment uses along the Mason Street corridor, although heights would be low in portions of this area. Other locations for hotel development would be along Market Street or just south of it.

A first class hotel is projected to be added in Subarea 1. A more moderately priced hotel/motel is forecast for Subarea 3. A new hotel is forecast for Subarea 2 because of its proximity to the Moscone Center and the reduced availability of sites in other areas, particularly those north of Market Street. Some upgrading of existing transient hotels in Subareas 5 and 6 is also projected.

In addition to its effects on the size of hotel projects and on their location within the C-3 District, the Plan would have a small effect on the total amount of hotel growth in the C-3 District. The amount of hotel development would reflect building size constraints, the difficulties of securing suitable sites, and the demand impacts from less growth of C-3 District office activity and associated business travel.

Other Non-Residential Space

Three categories show continuing net decreases in space in the C-3 District during the 1990-2000 period (see Tables IV.B.9 and IV.B.11). Cultural/institutional/educational/other, industrial/warehouse/automotive, and parking space would each be increasingly subject to pressure from higher-rent-paying land uses, as the level of activity in the C-3 District increased. For some of these uses, less space would mean more intensive use of remaining space and would not necessarily represent decreased activity and employment. In other situations, there would be less overall C-3 District activity and employment in a particular use category.

Cultural/Institutional/Educational/Other Space. In 2000, under the Downtown Plan, there would be 5.5 million sq. ft. of space in cultural, institutional, educational, and other uses. These uses would be distributed throughout the C-3 District. The largest amount of this space would be located in Subarea 5

(35 percent), followed by the amount in Subarea 3 (23 percent).

From 1990 to 2000 there would be a decrease in space occupied by these uses of about 510,000 sq. ft., or eight percent. All of this change would occur in the space in the "other" uses category. As it appears in the Downtown EIR Land Use Inventory, space in the "other" category is largely vacant, unoccupied space. The forecast decline in "other" space would occur because of both demolition for new construction (about 40 percent) and upgrading and conversions to another use category (about 60 percent) including the remodeling of vacant or underutilized space. While there would be no change in the amount of space in cultural, educational, and institutional uses, these activities would shift to more peripheral C-3 District locations over time and would make more efficient use of space as rents increase. Growth of activities of these types would occur in other City areas outside the C-3 District.

Over the 16-year period from 1984 to 2000, space occupied by cultural, institutional, educational, and other uses would decline by about 630,000 sq. ft. or by 10 percent. There would be less net decline from 1984 to 1990 than in the later period largely because Yerba Buena Center contributes new space of these types.

Industrial/Warehouse/Automotive Space. In 2000, there would be about 2.4 million sq. ft. of space in the C-3 District in industrial, warehouse, and automotive uses. The majority would be located in Subarea 3 (61 percent) and the next largest amount in Subarea 5 (23 percent).

From 1990 to 2000, space of these types in the C-3 District is forecast to decrease by 900,000 sq. ft. or 27 percent. This change would continue a trend similar to the 1984 to 1990 period. From 1984 to 2000, there would be a total decline of 1.7 million sq. ft. of space in industrial, warehouse, and automotive use in the C-3 District, a decline of 42 percent. These declines reflect the shift of these function outside the C-3 District, primarily to locations south of Folsom Street.

Most of the decline of C-3 District space in industrial, warehouse, and automotive uses would occur because of the conversion of these types of space to office uses. From 1990 to 2000 about 85 percent of the decline occurs because of conversions. The remaining 15 percent would represent existing space demolished for new construction.

The amount of demolition appears relatively small because most new construction would not occur in the locations where these uses remain by 1990. Most of the forecast demolition of these types of space would occur in Subarea 2 although most of these uses exist in Subareas 3 and 5 (which would experience relatively small amounts of new construction).

These types of space provide the main source of supply for converted office space. Office tenants seeking lower rent opportunities would increasingly accept peripheral C-3 District locations. To many property owners, it would make economic sense to convert to office uses because the relatively low office rents would still exceed the rents obtainable from industrial, warehouse, and automotive uses. Most of the conversions would occur in Subareas 3 and 5./71/

Parking. C-3 District space devoted to parking would total about six million sq. ft. by 2000. Parking space would continue to be distributed throughout the C-3 District. The largest amounts would be in Subareas 3, 6, and 5.

From 1990 to 2000, parking space would decline by about 376,000 sq. ft. or six percent. C-3 District space used for parking would be lost as those sites are taken for new development. Over the 16-year period from 1984 to 2000, there would be a net decline of parking space in the C-3 District of about 200,000 sq. ft. or three percent. The decline from 1990 to 2000 would be partially offset by the net increase in parking space from 1984 to 1990 as a result of parking added in Yerba Buena Center.

The forecasts do not include any additional parking provided during the 1990-2000 period. If short-term parking lost due to new construction were required to be replaced, the net decline of C-3 District parking would be less than indicated here. It is also possible that parking would be provided on the periphery of the C-3 District or outside the District as is encouraged by the Plan. This could replace parking lost due to new development and could potentially add to the total supply.

Residential Space

There would be about 8.6 million sq. ft. of residential space in the C-3 District by 2000 (see Table IV.B.9)./72/ That total would include 2.8 million sq. ft. of space in residential hotels and 5.8 million sq. ft. in other housing. Most of the residential hotels would be in Subarea 5 (78 percent). The largest amount of other housing would also be in Subarea 5 (41 percent), followed by the next largest amounts in Subareas 3 and 7 (each with 15 percent)./73/

New Housing. From 1990 to 2000, 570,000 sq. ft. of new housing space is forecast to be developed in the C-3 District, an addition of 600 housing units. This would represent an 11 percent increase in C-3 District housing (excluding residential hotels) (see Table IV.B.11). When combined with the C-3 District housing development from 1984 to 1990, about 1.7 million sq. ft. of housing would be added in the C-3 District from 1984 to 2000. This development would represent a 40 percent increase in C-3 District housing (excluding residential hotels). It would be a 19 percent increase in space for the total of both residential hotels and other housing.

The new housing units would vary in size, averaging around 900 to 1,000 sq. ft. per unit. The new housing would be offered at market prices except for a small number of units which might be built for low and moderate income households (such as those proposed for the Rincon Annex site). The sales prices of the market units would vary by location and size of unit, possibly averaging about $240,000 per unit and ranging from $160,000 to $300,000 per unit (in 1982 dollars)./74/

The forecasts of C-3 District housing development do not take into account housing assistance that is required as a condition of office development under the City's Office-Housing Production Program (OHPP). A housing requirement is not specifically included in the Downtown Plan and, thus, is not evaluated as an impact of the Plan. Because the City has an on-going program for housing production that is on a legislative track separate from the Downtown Plan, the OHPP is considered in the mitigation section of this EIR (see Section V.D).

For the purpose of comparison, it is noted here that the application of the OHPP to new C-3 District office development under the Downtown Plan would result in additional housing production in the City, perhaps a net addition in the order of 1,800 units over the 10-year period. The requirement would generate more housing, but not all of this production could be considered a net addition to the citywide housing stock. Some of these units would be in the C-3 District.

In addition, under the Plan, a substantial amount of new office development could occur outside the C-3 District (see "City and region" discussion later in this section). The OHPP would apply to this development, resulting in more housing added in the City, perhaps 1,000 to 1,500 more units. This additional housing production would depend on the amount of new office space developed which would, in turn, depend on development costs. The costs of the OHPP would have more effect on office development outside the C-3 District, where the demand would be for lower-rent office space. Therefore, application of the OHPP in areas outside the C-3 District would result in less new office development there than would otherwise occur under the Downtown Plan. (See Section V.D, Residence Patterns and Housing Mitigation for more detailed discussion of the OHPP and Section IV.D Residence Patterns and Housing Impact for discussion of citywide housing production and how much of this production can be considered a net addition due to C-3 District policies.)

Regardless of the OHPP, the Downtown Plan would have an effect on housing development in the C-3 District. Two types of effects are of most importance. One is that the Plan proposes to allow housing above the base FAR up to the maximum space permitted by height, bulk, and sunlight access requirements on a conditional use basis. This policy would apply to the C-3-G and C-3-S portions of Subareas 3, 4, and 5. This policy would encourage housing development on some sites in these subareas.

The other effect of the Plan on C-3 District housing development arises because of policies which would directly affect other types of development, particularly office. Policies limiting development in Subareas 1 and 6 north of Market Street and redirecting development into Subareas 1, 2, and 6 south of Market Street would increase competition for available sites in all of these areas. Generally, it would become more difficult for housing to compete with commercial land uses for sites in these subareas.

As a result of both of these considerations, about 60 percent of the C-3 District housing forecast to be built from 1990 to 2000 would be developed in Subareas 3, 4, 5, and 7. Among these subareas, the largest number of units would probably be added in Subarea 5. Although the Plan policies encouraging housing do not necessarily apply in Subarea 7 (since most of it would be taken out of the C-3 District and included in the Chinatown Special Use District for which policies have not yet been proposed), it is assumed that a relatively small amount of new housing would be allowed and would be built there. A relatively limited amount of housing is forecast for Subarea 1, probably to be incorporated in a large, mixed use project(s). No new housing is forecast for Subareas 2 and 6 although some of the housing forecast for Subarea 1 could occur in these areas instead.

There are proposals to expand the supply of housing in several areas adjacent to the C-3 District. These proposals are not specific to the Downtown Plan but include projects from other plans and rezoning studies and are incorporated in the citywide Housing Element. Since these projects would not be built in the C-3 District, they are not included in the forecasts in this section. Instead they are addressed as a part of the citywide analysis of housing for C-3 District workers which is presented later in this EIR. (See Section IV.D, Residence Patterns and Housing Impact).

Existing Housing. The forecasts of C-3 District housing in 2000 assume that there are no changes in the 1990 stock of housing. For residential hotels, it is assumed that the Residential Hotel Conversion and Demolition Ordinance would continue to protect the existing residential hotel units in the C-3 District. For other housing, there were two different assumptions about future policies.

The Downtown Plan proposes that several areas within the current C-3 District with large amounts of housing be removed from C-3 District zoning (see discussion of boundary changes at the beginning of this section). About 45 percent of C-3 District housing space in 1990 would be included in these rezoned areas./75/ The zoning for this housing would be changed to the North of Market Mixed Use District (about 60 percent), to the Chinatown Special Use District (about 40 percent), or to RC-4 or RM-4 (small amount). The 2000 forecasts assume that the policies adopted for these zoning districts would either protect existing housing from conversion and demolition or require that existing housing be replaced with units similar to those removed.

For the housing remaining under C-3 District zoning (about 55 percent of the 1990 housing space), the forecasts assume that Plan policies would protect existing housing. The Plan recommends that an ordinance regulating demolition or conversion of these units should be considered. Pending adoption of such an ordinance, demolition and conversion would be subject to conditional use review./76/ It is assumed that existing housing would be protected or replaced by similar units as a result of either an ordinance or conditional use review.

If these assumptions about existing housing remaining in the C-3 District are not met, some housing could be lost. Units under most pressure would be those in small buildings, surrounded by non-residential uses, in locations where commercial demand would be strong (Subareas 1 and 6) or where most development would occur (Subareas 1 and 2).

Separate from changes in the numbers of units and amount of housing space, there is the question of changes in the prices and rents and in the quality of existing C-3 District housing. Although some change is possible, existing C-3 District housing would continue to be among the City housing with lower than average rents and prices. The main reasons are because the downtown housing stock is older, unit sizes are relatively small, and City policies concerned with preserving housing of this type would be adopted.

Because major changes are not expected in existing downtown housing, there would be differences between most of the new housing added in the C-3 District at market prices and rents (excluding subsidized units) and the existing C-3 District housing stock. The new housing is unlikely to significantly alter the market orientation of the existing housing. The number of new units would be small relative to the existing number of units, and much of the new housing would not be built in close proximity to existing units.

Beyond 2000, C-3 District Land Use and Development

The general pattern of C-3 District development and land use change described for the 1990 to 2000 period would continue to apply beyond the year 2000 under the Downtown Plan. Over the long term, the effects of the Plan would become more visible and obvious in land use and activity downtown. The real estate market would have adapted to the redirection of the path of growth, and most major development would be occurring in locations south of Market Street east of YBC.

As explained earlier in this section (see "Timing Of Impacts"), it will take time for decisions made under the policies of the Plan to become evidenced in land use changes in the downtown area. By the year 2000 and beyond, the pattern of major office development would have shifted south of Market Street east of YBC. Some development would still be occurring north of Market Street but in a manner which would preserve designated historic buildings and which would fit into the scale and character of existing areas. Enough development would have occurred by this time that this overall pattern would be visible. The enhanced amenities and urban character of the C-3 District that would result from the Plan would begin to attract more business activity to the City, thus to some extent counter-acting the effect of increasing rents over time.

Beyond 2000, proportionally more of the office development on an annual basis would be occurring south of Market Street, particularly in Subarea 2. Many of the north of Market sites with opportunities for development in 1984 would have been taken. Similarly, south of Market development which was focused on the blocks between Market and Mission Street in 1984 would have moved further south across Mission to Howard and south along the Second Street corridor. Office rents would have risen as the acceptability of these areas increased. Thus, beyond 2000, sites in Subarea 2 would represent an increasingly larger percentage of new office construction. This would continue the trend shown in Table IV.B.12.

The areas beyond the southern boundary of the C-3 District along Folsom Street would be becoming more active and more of an integral part of the downtown area by 2000. There could also be increased interest in some of the C-3 District areas along and around Market Street in Subarea 5, although the Plan allows larger scale new development in only a few areas. Although the real estate market will move slowly to these areas, they could become relatively more desirable once the development in Yerba Buena Center is completed and after somewhat more activity fills in along Market Street in Subarea 4.

Beyond 2000, it would take larger amounts of new office construction annually to sustain the levels of employment growth forecast for the C-3 District from 1990 to 2000. This is because the market adjustments, whereby tenants make more intensive use of existing space because of higher space costs (rents), would not continue to the same degree. Thus, increasing the density of activity in existing C-3 District space would not have as much effect on reducing the demand for new space. The result could be somewhat higher annual amounts of C-3 District office building construction for a period of time beyond 2000. However, the increasing scarcity of desirable sites in Subareas 1 and 2 would eventually limit the rate of new construction within the C-3 District boundaries. (Also see Section IV.C, Business and Employment Impact.)

City and Region

Although the C-3 District would be the area directly affected by the Downtown Plan, there could be indirect effects on development and land use outside the C-3 District. This subsection identifies possible impacts in the rest of the City and elsewhere in the region. The perspective is on overall land use and development patterns and on whether the Plan's effects in the

C-3 District would mean shifts in activity and development to areas outside the C-3 District. The potential for shifts in activity primarily concerns office space and the uses it replaces, since new office building development would be the most affected by the policies of the Plan.

Office Space

San Francisco Areas South of the C-3 District. The Plan's strategy to redirect office growth to C-3 District areas south of Market Street east of YBC would also have an effect on areas further south, outside the C-3 District. As the major office core continues to move south within the C-3 district, other office functions which are generally at the periphery of the downtown area would shift outside the C-3 District. In addition, generally higher rents for C-3 District office space in most subareas would result in some spillover of activity south of the C-3 District where rents would be lower. Generally, the office activities that would shift to areas south of the C-3 District include data processing and administrative functions which seek large amounts of relatively low-cost space, often seeking lower cost sites for the construction of their own facilities. The group would also include a variety of smaller firms seeking lower-rent space usually in existing buildings converted from other uses.

To some extent, this shifting pattern is already underway and would continue without the Downtown Plan. The size of the downtown area continues to expand as employment grows, as development moves into new areas, and as activities on the periphery move outward. It is evident from historic development patterns, existing land uses, and proposed projects that the financial district is moving south of Market Street. However, the Downtown Plan policies would speed up the timing of this shift and would increase the overall amount of activity involved.

The extent that office activities shift south of the C-3 District would depend on zoning policies in these other areas and whether they allow or encourage such shifts. Of importance will be the total amount of area where new development and conversions are allowed and all of the policies affecting the size of buildings, the costs of development, and the extent of conversions./77/ The outcome of upcoming efforts to reevaluate current policies in the south of Market area, as well as decisions regarding the proposed Mission Bay development will determine how the increased pressures for change would affect south of Market land use.

Expansion of downtown activity further south of Market raises questions of impacts in this area. Issues of land use impacts include the potential for conflicts between new and existing land uses and for eventual displacement of existing land uses. There is also concern for providing the infrastructure needed to accommodate land use change and increased activity. Impacts of these types would not arise solely because of the Downtown Plan. However, the Downtown Plan could contribute to these types of impacts and serves to raise these issues.

As downtown activities move south of C-3 District, the existing types of businesses and jobs may find it more difficult to operate there. Although the office activities moving into these areas would be seeking lower-cost space, they would be willing to pay higher rents than the existing occupants pay. The office activities would support a general upgrading of space in the area and an increase in rents and property values. As this process occurs, many of the existing types of very low intensity uses could be outbid for space and would move to less costly locations, often still further south. Concern for the diversity of industrial, warehouse, and service uses in the south of Market focuses on the types of employment opportunities they offer and on their importance as support to the downtown office and retail sectors.

Transition of this type directly affects existing business and property owners, although not necessarily in the same ways. Business tenants renting space may find it increasingly costly to do business as competition for space increases. Some businesses would relocate, bearing the costs of moving and possibly increasing the costs of their services. Other businesses may find it relatively more costly to relocate and more difficult to reestablish operations and customers in a new location. These businesses may cease operations, making it more difficult and more costly for others to secure the services they provide. Property owners, including businesses which own their facilities, could benefit from increasing property values. Higher property values could support a move and could facilitate the upgrading of older equipment and facilities. This situation could reduce the costs of services to others. Increased property values could also signal the end of long-operating family businesses with somewhat marginal existing operations. In this situation, it could become more difficult and more costly to secure certain services.

As downtown activities move south of the C-3 District, there is also the potential for conflict with existing residential uses. Portions of the south of Market area currently provide a source of relatively low-cost housing. This includes housing for artists or others who may live near or within their place of work. The older, warehouse structures with loft spaces lend themselves to these uses as do the relatively lower rents. As the desirability of these areas for office uses increases, there would be increased competition for the conversion of space which had been used for housing. Pressures would be greatest for the warehouse structures which could be easily converted to office use. Residential tenants could eventually be displaced to more peripheral locations. Policies in the south of Market area or in portions of it could affect the extent to which housing is displaced by other uses.

As changes occur in the land uses south of Market, infrastructure and public improvements would be needed to facilitate additional activity. Perhaps the most important issues would concern the expansion of transportation services and the provision of open space. The problem would be to provide these services without increasing the costs of space in the area to the point where the advantages of the location are overcome by the higher costs. While this result would slow the spillover of activity from the C-3 District and the transition in the existing area, it would also mean less economic and employment growth for the City overall.

Other San Francisco Areas. There has already been expansion of downtown commercial activities to the north and west of the C-3 District. Office activities have increased in the Washington/Broadway and Northern Waterfront areas, in Chinatown, and in portions of North Beach. There is also upgrading occurring on the borders of the Tenderloin, north of Market Street and in and around Civic Center. Evaluation of the Downtown Plan raises the question of whether it would increase the spillover of activity into these areas.

The policies of the Downtown Plan are designed to limit major office growth north of Market Street and west of the current financial district by redirecting it to areas south of Market Street east of YBC. In addition, certain portions of the C-3 District, including Chinatown and the Tenderloin north of Market Street, would be removed from the C-3 District and policies developed to meet the particular needs of each area. The Plan also proposes that existing housing in the C-3 District be protected by conditional use review or special ordinance. With these policies, the Downtown Plan attempts to minimize the shift of downtown activities into nearby areas.

Indirectly, however, less office expansion in the office core areas north of Market Street would result in increased competition for existing space, higher rents, and some increase in spillover of activity into nearby areas. While major new construction would be redirected to Subareas 1 and 2 south of Market Street, there is the potential for some increase in the spillover of activity to existing buildings in the areas north and west. The extent of such spillover and its effects will depend on the policies in these other areas as well. The potential land use impacts are those of increased office demand, increased rents, and the eventual replacement of lower-rent-payers by higher-rent-paying office uses. Identification of the potential for such effects in various individual areas is summarized below.

- Northern Waterfront And Washington/Broadway Special Use District. The Downtown Plan could result in somewhat more office activity in this area. No major changes in land use are expected. Rules regarding the size of buildings and types of development are already in place. If anything, the Plan might hasten the occupancy of older warehouses already converting to office use and might contribute to slightly higher overall office rents. Given the Plan's general southerly redirection of downtown office activity, however, this area would be further removed from the office core area, which might counteract these spillover effects.

- Chinatown. The Downtown Plan could accelerate the spillover of office activities into this area, particularly in the locations which border the C-3 District. Changes in Chinatown land use will depend on the policies of the Chinatown Special Area Plan currently under preparation. It is likely that existing housing would be protected. Attention is also likely to be focused on preserving the scale and character of portions of the area. However, some increase in office activities in existing buildings and higher rents are probably likely under any future policies.

- North Beach. The Downtown Plan could also result in the spillover of office activities into this area, primarily in areas closest to the C-3 District. Changes in land use will depend on the policies permanently adopted for the area after study of rezoning there. It is likely that existing housing would be protected and that attention will focus on preserving the scale and character of the area. Some increase in office activities in existing buildings and higher rents are likely, however, under any future policies.

- North of Market/Tenderloin Outside The C-3 District. Downtown policies are unlikely to have a significant effect on most of this area as a result of the spillover of office activities. The predominantly residential areas nearest the C-3 District are being rezoned into the North of Market Mixed Use District. Policies to preserve these areas for residential use are proposed. Major office expansion in this direction and beyond is unlikely due to both the zoning policies there and to market forces. Potentially, some increase in the upgrading of older space for office or retail use would occur under the Plan. The changes would not be large and would occur in areas closest to the C-3 District.

- Civic Center/Van Ness Corridor. The Downtown Plan is unlikely to have a large effect on land use in these areas. The area already provides for government activities, performing arts and cultural events, and for various commercial activities including office. In addition, new zoning policies have recently been prepared for the Van Ness Corridor. In a relatively minor way, the Downtown Plan could be responsible for some additional office space in these areas, primarily for firms seeking lower-cost options.

- Neighborhood Commercial Districts. Downtown Plan policies are unlikely to have a significant effect on these districts. There could be some increased interest in small office space in the districts closest to the downtown. These would not be large office tenants but rather smaller-space-users seeking less costly locations, potentially closer to the residences of owners and employees. The extent of potential effects of these types will also depend on the zoning policies in effect in each district.

Elsewhere In the Region. Office development elsewhere in the region is generally projected to continue at a strong pace. In the future, a larger percentage of regional office growth is expected to occur outside of San Francisco than in the past./78/ This pattern results from a number of national, regional, and local factors.

The Downtown Plan could have an effect on the overall development pattern of the region, but it would not cause major changes in it. If anything, it would contribute to a slightly more decentralized pattern. Generally, the policies which preserve certain areas of the C-3 District and redirect growth to other C-3 District locations and to areas outside the C-3 District could result in less total office growth in San Francisco and more growth elsewhere in the region. This would also depend on policies in the south of Market areas outside the C-3 District. Generally, it is expected that much of the shift could occur within San Francisco, although there could be some shift to areas outside of San Francisco. Most of this shift would probably be to the East Bay.

The predominantly high-technology office market in Santa Clara County would be relatively unaffected by the Plan for San Francisco's C-3 District, though San Francisco may compete for firms seeking headquarters office locations. San Mateo County has a large number of office sites ready for development, but absorption may not be as fast as the developers anticipate. Generally, the Downtown Plan would not have a major effect on this market. In fact, development in the northern part of San Mateo county would be more competitive with City locations outside the C-3 District than with locations in the downtown area. The East Bay office market, particularly in Alameda and Contra Costa counties, would be the most affected by the Downtown Plan's effects of a lower supply of C-3 District office space and higher rents. Relatively lower cost office space in the East Bay would appeal to the types of uses unwilling or unable to pay the higher San Francisco rents. The housing market in the East Bay in combination with the characteristics of the labor supply in suburban areas would add to the East Bay's attractiveness for certain business functions.

Other Uses

The Downtown Plan would not have as much effect on downtown uses other than office. Consequently, there would be little impact by these uses on other City and regional areas.

In the case of retail development, the effect of the Downtown Plan would be to shift the office-worker component of demand to other locations. If office space that would otherwise be in the C-3 District were developed elsewhere in San Francisco or in other Bay Area counties, retail development would also take place there to serve the office workers. This development would not necessarily be in the form of newly constructed shops and restaurants. As in the C-3 District, sales may increase in existing retail establishments and the mix of shops and restaurants might change to satisfy new customer demands.

For hotel development, the Plan would have the effect of shifting a relatively small amount of potential hotel growth to a San Francisco location outside the C-3 District. The most likely candidates for an alternative location would be sites along the waterfront.

Cultural, institutional, and educational uses would remain stable in the C-3 District. Relatively small growth that could otherwise have occurred in the C-3 District would probably locate further south of Market Street or in areas in and around the Civic Center and performing arts complex.

Industrial, warehouse and automotive uses would continue their long term shift away from central, increasingly valuable, locations. The Plan would not have a significant effect on this pattern. Parking facilities to replace some of those removed for new C-3 District development would probably be built outside the C-3 District.

As for the new residential development in the C-3 District under the Downtown Plan, some of the units built would have otherwise been developed in another San Francisco location. Others would be a net addition to the total units added in the City. In either case, the number of units is not large and would have a relatively small effect on citywide land use patterns.

Transferable Development Rights System From A Real Estate Market Perspective

Introduction

The Downtown Plan proposes a new system involving the transfer of development rights. The basic strategy is to provide transferable development rights (TDRs) in return for the property owner foregoing the right to develop the site of a designated historic building or of proposed open space. The TDR system is designed to fulfill three of the Plan's overall goals: preserving architecturally significant buildings, redirecting downtown office expansion, and creating a network of usable open space.

For historic preservation, the Plan would require the retention of the highest quality buildings (called significant buildings and rated as category I or II buildings). The ability to sell development rights to the developer of another lot would be a means of compensating the owner of a significant building for the prohibition of demolition and new development on the site. The Plan would also designate other highly rated buildings whose retention would be desirable but not required by the Plan (called contributory buildings and rated as category III or IV buildings). The ability to sell TDRs would provide incentives for retaining these buildings.

To redirect new development, the Plan proposes creation of a Special Development District (Subarea 2). Developers in this area would be allowed to purchase TDRs from anywhere in the C-3 District. Other TDR transactions could only occur between lots in the same zoning district.

For the provision of open space, the Plan proposes that the development rights from an open space site be allowed to be transferred to non-adjacent development sites. In this situation, TDRs would provide a way of financing the use of private property for large, high quality public open space areas.

Analysis was done to evaluate how the proposed TDR system is likely to "work" from a real estate market perspective. Two considerations are particularly important. One concerns the strength of the incentives to use TDRs. The other major consideration is how the supply of TDRs is likely to compare to the demand for TDRs. These interrelated consideration determine the economics of the market which is created for buying and selling TDRs. The market interactions, in turn, determine the effectiveness of the system in preserving significant buildings, shifting the location of new development, and providing open space.

The land use forecasts presented earlier in this section include the effects of the TDR system. The discussion in this subsection takes a broader, overview perspective of how the program is likely to work over the long term, not necessarily focussed on the specific forecasts for particular years.

Incentives For Using TDRs

Many of the policies of the Plan would combine with real estate market forces to provide incentives for the use of TDRs. The requirement to preserve significant buildings, the policies to control the scale and character of development in specific, sensitive areas (through lower heights, conservation district design review, etc.), and the reduced base FARs (for development without TDRs) would result in a shortage of sites for new office development in the most preferred areas. Development of large office buildings that exceed the base FAR would only be possible if TDRs are used. There would be no other office development bonuses to compete with TDRs.

TDRs could be used to exceed the base FAR up to the maximum allowable under height, bulk and other controls. In general the Plan reduces the area in which tall buildings would be encouraged. The Plan proposes to increase existing height limits in the area south of the Transbay Terminal, called the Special Development District. (This area is referred to elsewhere in the EIR as Subarea 2.) Height limits would also be high in areas determined to be less sensitive to major new development than the financial district and Union Square areas north of Market Street.

Continued strong demand for C-3 District space (due to employment growth), in conjunction with the Plan's reduction of development potential in the most preferred areas, results in an incentive to purchase TDRs to be able to develop large buildings in areas where this is encouraged. The next subsection compares TDR demand and supply to provide an indication of how the requirements and incentives are likely to affect development patterns and the Plan's preservation and open space strategies.

The TDR System From A Supply And Demand Perspective

Although the TDR system would eventually be effective, it would take time for it to become established. There would be definitional and procedural issues to resolve. It would also take time for owners to understand the policies of the Plan and to become convinced of their permanence.

However, given the incentives described above, the demand for TDRs would become established as builders would require TDRs to develop projects exceeding the base FAR that would accommodate demand for space due to employment growth. TDRs would become available for sale as owners decide that the price offered for TDRs justifies foregoing development or justifies selling at a particular time in situations where retention would be required. Over time, the market for TDRs would regulate itself through the prices paid for TDRs (higher prices would induce more supply; large supply relative to demand could lower prices). Thus, at any particular time, the demand for and supply of TDRs would be in "balance".

It is possible to take a broad, overview perspective on how the overall demand for and supply of TDRs is likely to compare. One of the reasons for making such a comparison is to develop a better understanding of how the system is likely to work. However, there are many uncertainties which make it difficult to quantify total demand and supply. The only workable approach is to make alternative assumptions for purposes of testing the importance of the key demand and supply factors. Appendix G describes the mechanics of calculating the TDR supply and demand estimates used in this analysis./79/

Supply Considerations. Regarding the total potential supply of TDRs, there are several factors of importance. Of the total potential supply created by the policies of the Downtown Plan, most TDRs (about 60-65 percent) would come from significant buildings where retention would be required./80/ A relatively small amount (four to five percent) would be TDRs available from sites identified for open space in Subarea 2. The rest (about 30-35 percent) would be TDRs available from contributory buildings where retention would be encouraged but not required. This latter category also includes a small amount of potential TDRs from non-rated buildings in conservation districts./81/

Of this total potential supply of TDRs, it is uncertain how many would actually be put on the market. The TDRs from significant buildings would eventually be available for sale except in situations where on-site additions to category II buildings used potential TDRs. It is also likely that the TDRs from open space sites would be sold because developers would use these sites to satisfy open space requirements. The situation for contributory buildings is less clear. It is probable that the shortage of sites for new office development in the most preferred areas would mean that some sites with contributory buildings would be used for new development, thus losing the ability to sell TDRs. Since it is not required that contributory buildings be retained, TDRs from sites with longer term potentials are likely to be held off the market for some time into the future. Eventually some of these owners would sell TDRs and others would use their sites for new development. Given these uncertainties, it is possible that the actual supply of TDRs from designated buildings and open space sites could range from about two-thirds to about 90 percent of the total potential supply created by Plan policies.

Demand Considerations. The demand for TDRs would depend on the size of new buildings and the amount of space developed over time in buildings which require TDRs. Estimates were prepared of the demand for TDRs from the development which would occur on sites most likely to be developed over the period of 25 to 35 years (after 1984)./82/ Of major importance to the demand for TDRs are decisions about whether the new building would be built to the maximum allowable under the Plan (satisfying height, bulk, and other requirements) or at somewhat less than that potential. Although real estate economics provides indications of the likely size of buildings, there are many site-specific factors (such as parcel agglomeration and site coverage) which make it very difficult to accurately forecast what would occur. Thus, a range of estimates was developed./83/

There is another difficulty in considering demand. The demand for TDRs depends on the time frame specified. Since the demand depends on the amount of development, the further one goes into the future, the larger would be the estimate of demand. For this analysis, demand was estimated for about a 25 to 35 year period. It is not reasonable to develop estimates for a longer time frame, although there would be demand beyond that time.

Comparison Of Demand And Supply. Recognizing all of the uncertainties involved, comparison of possible demand and supply parameters provides an indication of how the system might work.

Generally, it is possible that the supply of TDRs could be absorbed by demand for them over the next 25 to 35 years. If the supply were nearer the high-end estimate and demand were nearer the low-end estimate, it would take longer than that. It appears unlikely that the demand would be large enough to absorb the supply in less than 25 years. The timing of demand reflects the time when TDRs would be needed for new construction projects. It is possible that they could be purchased before they are needed. If such a market developed, the time period for the sale of TDRs would be shorter than that indicated above.

While these time periods may appear long, several points should be noted. One is that while the Plan is sometimes considered within a 20-year planning horizon, there is no reason why all of the TDRs designated in the Plan would have to be sold by then. The analysis indicates that it would probably take longer than that before the TDRs would be sold and used for development. Another point is that the buildings designated in the Plan as eligible for TDRs may include many sites which would not have been developed for a long time into the future. Thus, the timing of demand for their TDRs may not come any later than their timing for development.

In general, the comparisons of supply and demand indicate that overall demand alone is unlikely to be strong enough relative to supply to create strong incentives for preserving contributory buildings, the retention of which is not required. At least, this situation is unlikely to exist for some time into the future. Thus, some buildings in this group could be demolished. However, as explained in the next subsection, the retention of many of these buildings would depend more on the lower heights proposed in the Plan than on the demand for TDRs. It appears that many of the contributory buildings might be retained, at least for a long time into the future, because they are large relative to the new buildings allowed on their sites under the Plan.

Special Development District. Policies allowing the transfer of TDRs from any subarea to the Special Development District (Subarea 2) would have an effect on the market for TDRs. They would divide the TDR market into segments or sub-markets according to differences in the value of the rights for development.

Among subareas, TDRs are more valuable if they can be used in higher rent areas (because development is more valuable there, buyers would pay more for the right to develop). They are less valuable in lower rent areas. Therefore, the availability of TDRs from relatively lower rent areas (Subareas 3, 4, and 5) would encourage development in the Special Development District (Subarea 2). However, owners of TDRs in higher rent areas (Subarea 1 and portions of Subarea 6) would not have an incentive to sell them in the Special District. These two segments of the market--(1) prime development areas and (2) the Special Development District along with the rest of the C-3 District-- would have different TDR supply and demand characteristics.

In the Special Development District, it appears that much of the demand for TDRs for new office development would be met by the supply of TDRs from Subareas 2, 3, 4, and 5. Owners of buildings in Subareas 3, 4, and 5 would be willing to sell TDRs at the lowest prices, since the cost of foregoing development would be lowest there. Thus, builders in Subarea 2 would purchase these TDRs to the extent that they are available. Owners of rated buildings in Subarea 2 would also supply TDRs since they would have no choice but to sell their TDRs in this subarea. (The supply of TDRs from rated buildings in Subarea 2 is small, about five percent of the total potential supply from all rated buildings.)

Estimates indicate that the potential supply of TDRs from Subareas 2, 3, 4, and 5 would exceed the probable demand for TDRs in the Special Development

District. Depending upon the eventual amount of new development in this area, somewhere between 50 percent and 80 percent of the potential supply of TDRs from these four subareas could be absorbed in the Special Development District. The rest of the TDRs from Subareas 3, 4, and 5 could eventually be used in their respective subareas.

Of the potential supply of TDRs from Subareas 3, 4, and 5, the majority would come from significant buildings./85/ The demand for TDRs in the Special Development District could probably be met by only the supply of TDRs from significant buildings in Subareas 3, 4, and 5 (assuming Subarea 2 TDRs were also used). If it were, there would be little incentive for owners of contributory buildings to sell their TDRs to Subarea 2 developers. Alternatively, the potential supply of TDRs from contributory buildings alone would probably be less than the Subarea 2 demand. However, these TDRs would probably not be transferred unless there were changes in the rules to limit the transfer of TDRs from significant buildings.

Builders of projects in Subarea 1 could afford to pay the highest prices to purchase TDRs. Similarly, owners of buildings in Subarea 1 would expect the highest prices for their TDRs (since the cost of foregoing development is highest). Given the expectations of Subarea 1 property owners, it is unlikely that TDRs from Subarea 1 would be transferred to the Special Development District, at least for some time into the future.

Within Subarea 1, the potential supply of TDRs is large relative to potential demand at least for the next 25 to 35 years. Under the high demand estimates (assuming large buildings and a large amount of development) the demand for TDRs could absorb the supply during a 25 to 35 year horizon. If demand were less, it would take longer. Under this latter case, demand could probably absorb most, if not all, of the TDRs from significant buildings.

Whether TDRs from Subarea 1 would eventually be transferred to the Special Development District depends, to some extent, on how the TDR system works and how fast development proceeds. If fewer owners in Subareas 3, 4, and 5 transfer TDRs into Subarea 2, there would eventually be demand for TDRs from Subarea 1, particularly as the rate of new development increases in

Subarea 2, consequently, and the value of development rights there increases.

The situation for Subarea 6 is relatively similar to that for Subarea 1. Owners of TDRs in Subarea 6 would expect higher prices for TDRs than builders in Subarea 2 are likely to be willing to pay for some time into the future. The large supply of TDRs from Subareas 3, 4, and 5 would be offered at lower prices. Within Subarea 6, there could be enough demand to absorb the supply of TDRs there. This would depend, however, on future development in a relatively small area, particularly in the block south of Market between Fourth and Fifth Streets. It is possible that demand would not absorb the supply for a longer time into the future. In this situation, some TDRs could eventually be transferred to the Special Development District depending on the workings of the TDR system, as described for Subarea 1 above.

Effect On Development Patterns

The Downtown Plan would be effective in shifting the location of new office development through the use of TDRs. The preservation requirement, the reduction of height limits and base FARs in the preferred development areas, and the policies to encourage development south of Market and in the Special Development District would create a supply of TDRs and would provide locations in which to use them. Development rights from preservation or open space sites would be purchased by the developers of sites in high height districts. Thus, limited new development would occur in the already intensively developed areas north of Market Street but more would occur, and at an increasing rate, in the currently lower-density south of Market Street areas east of YBC. Earlier parts of this section described the resultant development pattern to the year 2000 and beyond 2000.

Long Term Perspective On The Preservation of Architecturally Significant Buildings

The Downtown Plan would be effective in preserving architecturally significant buildings in the C-3 District. Not all of the contributory buildings designated in the Plan would be preserved. However, many of them would be retained./85/

Significant Buildings. The 266 buildings designated to be of highest quality would be required to be retained under the policies of the Downtown Plan. Thus, it is assumed that all of these buildings would be retained.

As allowed, portions of some of these buildings (those 37 buildings designated category II) could be substantially altered or replaced to provide for additions and expansion. Generally, expansion would occur when the physical condition and configuration of the building in combination with the amount and location of expansion allowed make it feasible to expand, both physically and economically. In some cases the name and prestige of the existing building or its location would make expansion more likely. In other cases, the present use would probably not support additional space. It is difficult to generalize as to how much expansion might occur without a detailed evaluation of each building. An overview indicates that perhaps expansion might occur in about half of the cases.

Contributory Buildings. The Downtown Plan proposes to encourage, but not require, the retention of 236 other buildings which contribute to the quality and character of downtown. Some of these buildings would be retained. Others would not. The outcome for each building depends on individual characteristics of the building as well as overall characteristics of the TDR market.

- Most Likely To Be Retained. The contributory buildings with the most probability of being retained would be those with no TDRs, those with few TDRs, and those on sites which also include housing. There would also be a good probability of retaining buildings in locations with weak development potential, buildings on very small, isolated sites where development is likely to be difficult, and buildings on sites where allowable new development would be less than the base FAR.

  A small amount of TDRs or no TDRs would occur in situations where the existing building is close to, equal to, or larger than new development allowed under the Plan's proposed base FAR policies. In these situations, the existing building is unlikely to be demolished to build a new structure of similar or smaller size. Exceptions could occur in situations where the existing building is in poor condition, is inefficient, or is designed for an obsolete use and could not be easily converted.

  Preliminary estimates indicate that sites with few or no TDRs could represent a relatively large share, around 40 percent, of all contributory buildings./86/ If these buildings were retained, it would be because of the heights and FARs proposed by the Plan not because of the TDR system.

There are relatively few contributory buildings that are also part of the downtown housing stock. In these cases, policies affecting the demolition, conversion, or replacement of existing housing could also serve as incentives for selling TDRs and retaining existing buildings. There are also buildings on sites with weak development potential: very small, isolated sites and sites where allowable new development would be less than the base FAR. Estimates of how many buildings are in this group are not available, but there would be a strong probability that they would be retained. It is possible that, in total, between 40 and 50 percent of the contributory buildings are in the group of all those likely to be retained.

- Least Likely To Be Retained. The contributory buildings with the most probability of being demolished are those on sites where development is likely to be feasible in the relatively near future. These would tend to be the contributory buildings with the largest amount of TDRs (smallest existing buildings) that are located in prime development areas or in the Special Development District. They would also include sites with moderate to large existing buildings which are adjacent to sites with greater development potential, providing the opportunity for site assemblage. Estimates indicate that a relatively small share of contributory buildings, about 10 to 15 percent, would be included among the sites in Subareas 1, 2, and 6 which are the most likely to be developed over the next 25 to 35 years.

- The Remaining Buildings. Of the rest of the contributory buildings (about 35 to 50 percent), some would be retained and others would be demolished. It is not possible to generalize about these buildings. Since they are not included among the sites where the incentives to develop are likely to be strongest, demolition probably would not occur for some time. Since they are not among the sites with few or no TDRs, the allowable new building is likely to be larger than the existing building (except in Subarea 1 conservation districts where low height limits are proposed), so there would be some incentive to redevelop. Given both these factors, there may be an incentive for these owners to wait for a while, holding their property and not selling TDRs since retention is not required. They may wait until rents increase at their location and development feasibility improves. Generally, the eventual outcome for an individual building in this group would depend on the following types of criteria: the physical condition and attractiveness of the existing building; the present use and the efficiency of the building for that use; the City's requirements for new development, particularly in conservation districts; the value of the location; the size of the site and the ability to agglomerate with adjacent sites; the size of the existing building in relation to the amount of allowable development, and the economics of the TDR market.

Long-Term Perspective On The Use Of TDRs To Finance Open Space

One means of satisfying the Plan's open space requirement would be financing the purchase and improvement of privately-owned lots developed as open space./87/ On-site open space that met the City's standards and other off-site options would also be acceptable. The Plan identifies as appropriate open space areas two privately-owned sites along Howard Street in Subarea 2 (the Special Development District) and three public areas in Subarea 1 (Sansome Street closure between Bush and Sutter Streets, Second Street closure between Market and Stevenson Streets, and the Transbay Terminal Plaza). Development of off-site open space would be financed by developer contributions in proportion to their open space requirement. Contributors to the development of privately-owned lots would receive TDRs in proportion to their contributions.

The two sites identified in the Special Development District can be used as examples of the prospects for the creation of open space on privately-owned sites in the C-3 District. Developers from all use districts would be able to contribute to the acqusition and/or development of such sites in the Special Development District and would be able to transfer a share of the development rights to their development lot. The development forecast for the entire C-3 District between 1990 and 2000 would result in a requirement for 200,000 sq. ft. of open space. Subarea 1 developers (accounting for 95,000 sq. ft. of the requirement) would contribute to development of the public open space identified in their subarea. A few would also provide on-site open space, and some would opt for the contributions to Subarea 2 sites because of the additional rentable space they would consequently obtain for their projects in the prime office area. Of the remaining requirement (105,000 sq. ft.) due to development in other subareas, some could be satisfied on-site but most would be satisfied off-site, potentially through the contributions to Special District sites. Thus, it is likely that privately-owned open space sites in the Special Development District could be developed by 2000.

As part of this process, TDRs would be absorbed and space above the base FAR added to development projects in the C-3 District. The TDRs to finance open space would not compete with the TDRs from rated buildings for the potential TDR demand from developers of new projects. The two programs serve different objectives of the Plan. Moreover, the open space TDRs are relatively small compared to the total potential demand for TDRs./88/

Impacts on Property Values

The real estate impacts of the Downtown Plan can be summarized from the perspective of C-3 District property owners. The owners of potential development sites have certain expectations for the land value of their property based on policies regarding appropriate land use, the size of new buildings, and development costs, as well as the demand for space (rents). Depending on the location of the property, the type and amount of existing building space, and the historic preservation status of the existing building, a change in policies will result in changes in property values.

In general, the Plan proposes more controls on new development and higher per square foot development costs than have been the case under the present Planning Code. These changes would tend to reduce the potential value of new development on a given site, compared to what it otherwise would have been at current rents. The same factors would also eventually result in an increase in rents, and thus an increase in the value of a development site or of existing building space. Whether the increase in value from higher rents compensates for the decrease in value because of reduced new development potential would depend on the characteristics of individual sites.

The Plan's proposed controls are specific to certain sites and areas of the C-3 District. Land values would be diminished for what had been prime development sites (mostly in Subarea 1 and 6). Land values in more outlying areas (Subarea 2, and parts of Subarea 3, 4, and 5) would increase faster than they otherwise might have. This would be particularly the case in Subarea 2, where the Plan deliberately redirects major new development to sites that would otherwise only be developed over the longer term.

Due to the slower rate of new development under the Plan, the values of existing buildings would increase at a faster pace than otherwise expected. Those in especially favorable positions would be the owners of recent major development projects and the owners of relatively large older buildings that are in good condition. These property owners would be able to take advantage of both the scarcity of new space and the continued strong demand for space in prime C-3 District locations to raise rents for existing space.

The owners of currently underutilized space in the outlying parts of the C-3 District (warehouse, industrial and vacant space) would be able to generate higher values for their buildings through investment in conversion to office uses. The likelihood of demolition and redevelopment would be small in these areas before 2000, in any case. Therefore, the ability to convert to office use represents an opportunity for a more profitable interim use of the property.

The TDR program would provide a means of compensating the owners of significant buildings for the required retention of their property. This would be most important for owners of small significant buildings in the existing office core area. Some of the owners of significant buildings in the outlying subareas (3, 4, and 5) who have TDRs to sell would find advantages in the Plan's provisions for the transfer of development rights from anywhere in the C-3 District into the Special Development District (Subarea 2). Because of the relatively weak demand for new space in these areas, these property owners would probably be better off in the short term by selling their development rights in an area where demand for space (and thus the value of new development) would be higher.

The owners of some significant buildings, primarily in the Union Square area, might not contemplate demolition and redevelopment in any case. To the extent that the character of the Union Square area is maintained and enhanced by the protective policies of the Plan, property owners in this area would benefit from increased values (increased sales, activity, and rents) for their existing space, as well as from the sale of TDRs.

NOTES - Land Use and Real Estate Development

/1/ The seven subareas are shown on Figure II.C.1.

/2/ Office space occupied by government activities, in both public and privately owned buildings, is included in this figure.

/3/ A random sample of about 100 office buildings using the data in the Downtown EIR Land Use Inventory revealed 10 percent non-office use.

/4/ As explained in Section IV.C, Business and Employment Setting, employment densities are expressed in terms of space per employee working in a business activity of a particular type. Employees of business activities in office space (office uses) work at different employment densities than employees in businesses in retail space (retail uses) even though both activities could be located in an office building. Since employment densities are associated with business activities it is the use of space that is the link between space and employment not necessarily the type of building in which the space is located.

/5/ The numbers in this paragraph are from Department of City Planning records and represent total, citywide new construction of space in office buildings without an allowance for demolition. The dates refer to times when projects are completed and are available for occupancy. The space to be completed from 1982 to 1984 includes space in office buildings under construction in 1982. As explained for the 1984 setting later in this section, the average period of construction for large office buildings is approximately three years. It is assumed that the buildings under construction in 1982 will have space available for occupancy in 1984.

/6/ The Downtown Plan, San Francisco Department of City Planning, August 1983 (hereinafter, Plan), p. 10.

/7/ The rents shown in Figure IV.B.1 were estimated by Recht Hausrath & Associates based on information from a survey of 16 realtors and other persons knowledgeable about the office real estate market undertaken as part of this study, and from interviews with other knowledgeable persons.

The rents were chosen primarily for use in the real estate analysis of development feasibility as explained in detail in Appendix G. The usefulness of these figures in this setting section is to identify the differences in office rents within the C-3 District which arise in the real estate market primarily as a function of location. By typical rents, the figures are judged to be representative of each rent area. As explained in the text, there is a range of rents within each area dependent on the type of facilities, condition of the space, and location within the area. The differences in rents among rent areas would be obscured by showing these ranges. The significance of these relative rents is in understanding how the market values different

NOTES - Land Use and Real Estate Development (Continued)

locations within the C-3 District and in their usefulness in forecasting future development patterns. This becomes more clear in subsequent sections (see Land Use and Real Estate Development Impact and Appendix G).

/8/ The City Planning Department's estimate of space in office buildings throughout San Francisco shows a total of 57.2 million sq. ft. in the total City at the end of 1981. The Downtown EIR Land Use Inventory for the C-3 District at the end of 1981 estimates 55 million sq. ft. of office space and 61 million sq. ft. of space in office buildings (including non-office uses such as retail and parking). While the large majority of office in the City is located in the C-3 District, the C-3 District estimates appear high relative to the citywide estimates (and vice-versa). Comparison of the methodologies for each estimate, however, indicates that they are not necessarily comparable. There appear to be differences in definitions and in estimating procedures. Further, each estimate is approximate and falls within a range of error. Given the methodological differences and the errors of estimate, the figures are consistent. However, they cannot be used to identify the percentage of citywide office represented by C-3 District office space. The following describes the types of differences which could exist between estimates.

The Department's estimate of space in office buildings is based on a pre-1960 data base which has been updated to account for new construction each year. It is assumed to reflect space in office buildings since ground floor retail space in new office buildings is included in the estimates of space developed each year which are used to update the total figures. It is unclear whether the 1960 data base also included other uses in office buildings. If not, this could be one reason why the citywide totals appear low relative to the C-3 District figures which include non-office uses in office buildings. Another definitional issue concerns the types of space categorized as office. In the C-3 District inventory, branch banks, upper floor space in the retail district, and showroom space in the apparel marts were categorized as office space. The C-3 District estimates could appear high relative to the Department's citywide estimates if the latter did not include these types of space.

The C-3 District estimate is based on field work conducted in late 1981 and includes all office space at that time. The Department's citywide estimate updates an earlier inventory figure based on new office building projects. The Department's citywide estimates could be low to the extent that small projects and space converted to office use from other uses since 1960 were not counted. Further, other differences could arise depending on how accurately the net addition of space each year accounted for demolitions.

NOTES - Land Use and Real Estate Development (Continued)

/9/ Association of Bay Area Governments (ABAG), "Bay Area Office Growth", Berkeley, California, April, 1981 pp. 31-62. This number may be an underestimate of total space in office buildings, as the sources for the report apparently do not always include small office buildings.

/10/ Ibid. p. 18.

/11/ Shoppers goods sales include sales in stores offering apparel and accessories, household goods and furnishings, other department store merchandise, and specialty items such as gifts, jewelry, art, and stationery. Shoppers goods sales represent a subcategory of total retail sales in retail stores. Other subcategories include convenience goods sales (food, liquor, and drugs), automotive sales (service stations, auto dealers, etc.), eating and drinking out, and other miscellaneous sales (building materials, second hand merchandise, farm and garden supplies, etc.).

/12/ U.S. Department of Commerce in 1977 Census of Retail Trade: Major Retail Centers in Standard Metropolitan (CBD), Statistical Areas, California. Retail sales in the Central Business District (CBD) a geographic area including the financial district, Union Square, part of the Tenderloin, Civic Center and blocks between Market and Howard Streets, from 11th Street to the Embarcadero, were 30% of total City retail sales in 1977. Shoppers goods sales represented 60% of CBD sales (54% of total City shoppers goods sales). These proportions were similar in 1972. A map of the CBD area is provided at the end of Appendix H. It is fairly similar to the C-3 District and both areas include the major downtown retail facilities.

/13/ Same source as note 12. In 1977, sales at Stonestown Shopping Center represented four percent of total City retail sales and six percent of citywide shoppers goods sales.

/14/ Estimate based on San Francisco Convention & Visitors Bureau, San Francisco Lodging Guide, 1982.

/15/ Housing is discussed here as a land use. It is also analyzed in the housing sections, though those sections are oriented to the relationship of jobs and housing.

/16/ The U.S.Census does not tabulate data specifically for the C-3 District. For this analysis, ten complete census tracts (114-115, 117, 118, 121, 123-125, 176, 178) were used as the best approximation of the geographic area covered by the C-3 District. If anything, these census tracts might include slightly more housing than is actually in the C-3 District. A map of these tracts is included at the end of Appendix G.

/17/ U.S. Department of Commerce, City and County of San Francisco, 1980 Census Information File STF1-A, March 1982, Report #4.

NOTES - Land Use and Real Estate Development (Continued)

/18/ Department of City Planning, A Study of the Conversion and Demolition of Residential Hotel Units, November, 1980, page 11. This report estimates that in 1980 there were 10,308 residential hotel rooms in four City areas including Union Square, Financial District, North of Market, and Chinatown. There also were 4,772 additional rooms in these four areas in non-first class hotels with both residential and transient occupancy. Since estimates were not prepared for the C-3 District, these figures provide an indication of the residential hotel units in the C-3 District. These four areas probably include hotels outside the C-3 District's northern boundaries but they do not include hotels in C-3 District areas south of Market Street or near the Civic Center.

/19/ Same source as note 17. Although rents have probably changed since the census figures, the relationship between rents in the downtown census tracts and the City has probably not changed appreciably.

/20/ The City Planning Department's study referenced in note 18 estimated that in the four areas used to approximate the C-3 District, 1,516 residential hotel units were converted to transient hotel use from 1975 to 1980 (see pages 13 and 17). Another 947 hotel units (most of which were probably in residential hotels) were vacated, demolished or converted to apartments in these areas. Although complete figures to explain the total decrease in downtown housing units are not available, these estimates provide an indication of the types of changes that occurred.

/21/ The relative differences in densities of existing development among subareas (Table IV.B.4) and the relative differences in rents among rent areas (Figure IV.B.1) support the pattern of new development indicated by the location of projects under construction and approved. This is also the pattern summarized for office construction earlier in this setting section.

/22/ All buildings completed prior to mid-1982 are included in the Downtown EIR Land Use Inventory, the 1981 inventory of space. A listing of the projects under construction in mid-1982 and included in Table IV.B.5 is included in the Downtown EIR Land Use Inventory, a copy of which is available for public review at the Department of City Planning, 450 McAllister Street.

/23/ Paragraph based on Recht Hausrath & Associates' experience in office market analyses in San Francisco and throughout the region.

/24/ The employment forecasts are presented and described in Section IV.C, Business and Employment Impact. The 1984 office employment forecast is also presented in Section IV.C, Business and Employment Setting. The basis for these forecasts and for the way in which they are used to identify the demand for office space is described in Appendix H, Employment Analysis.

NOTES - Land Use and Real Estate Development (Continued)

/25/ To compare the demand for office space with increases in supply, the net increase in office space is the appropriate measure of supply (not the amount of space under construction in office buildings). The difference between the 7.4 million gross sq. ft. of space constructed in office buildings (Table IV.B.5) and the 6.7 million gross sq. ft. net increase in office space (Tables IV.B.1 and IV.B.6) is due to (1) some space in new office buildings not used as office space (495,000 sq. ft.) and (2) the demolition of some existing office space to make way for new construction (719,000 sq. ft.), both offset to some extent by (3) the conversion to office activities of some existing space previously used for other purposes (542,000 sq. ft.). These changes in space are detailed in the supplemental tables at the end of Appendix G.

/26/ The demand for office space is estimated by multiplying the forecast increase in office employment by the employment densities (sq. ft. per employee) for business activities in office space. The employment forecasts and employment densities are presented in Section IV.C and in Appendix H. The demand for office space is calculated by separately converting the employment forecasts for each of the business activities which occupy office space into forecasts of space demand, adding five percent for vacancy, and then summing these figures to provide the 4.5 million sq. ft. of additional office space demand by 1984.

/27/ Considering all office projects under construction, the net increase in office space during the 1981-84 period (6.7 million sq. ft.) is larger than the additional demand for office space forecast for that period (4.5 million sq. ft.). The difference (2.2 million sq. ft.) is 3.54 percent of the total office space in the C-3 District in 1984 (2.2 million sq. ft. divided by 62.074 million sq. ft.). Thus the overall office vacancy rate could increase about four percentage points. The vacancy rate could increase by a greater percentage in 1982 and 1983 if most projects were completed prior to 1984.

/28/ Conversion and demolition are discussed under Land Use and Real Estate Development Impact and in Appendix G. See also note 25, above.

/29/ The net changes in space (by use) 1981-1984 are estimated by the differences between the figures in Tables IV.B.6 and IV.B.1. The figures shown in Table IV.B.5 (space by type of building) cannot be added to those in Table IV.B.1 (space by use) without first accounting for the uses in the newly constructed space (e.g. office, retail, or other uses in space in office buildings), demolitions, and conversions. The net changes in space shown by the differences between Tables IV.B.6 and IV.B.1 account for all of these factors. The supplemental tables at the end of Appendix G detail the net changes from each of these factors.

/30/ As explained in the previous subsection, not all of this increase in office space will be occupied in 1984 although it is projected to be built by then.

NOTES - Land Use and Real Estate Development

/31/ Appendix G describes the methodology for the land use and real estate development analysis.

/32/ The methodology for this process of "matching" space supply and demand is summarized in Appendix H. The role of this process in developing the land use and real estate development forecasts is described in Appendix G.

/33/ Although the land use and real estate development forecasts are consistent with the forecasts of business activity and employment, the Plan would have different effects on space and employment. For example, from 1990 to 2000, the rate of C-3 District employment growth would exceed the rate of growth of space because of changes in the use of existing space. Thus, the reader is encouraged to review both forecasts because of differences between these two measures of C-3 District growth. (See Section IV.B, Land Use And Real Estate Development Impact and Section IV.C, Business And Employment Impact.)

/34/ Even before the Downtown Plan is adopted, it would have an effect on the real estate market. Once the Plan is proposed, property owners, developers, and tenants begin to anticipate the new policies. The Plan has an effect on expectations about future space use and development which, in turn, affects planning for new projects, decisions regarding the value and timing of sale of property, and decisions about rents and amounts of space to be leased. However, for all the reasons described in the text, the consequences of the Plan's effects on real estate decisions would not be visible in land use changes and development patterns until closer to 1990.

/35/ For example, although the Plan would redirect growth south of Market Street east of YBC, landowners and developers may delay development decisions initially, choosing to wait and evaluate how rents might increase to justify highrise construction in some of the more peripheral areas. Further, the process whereby tenants evaluate whether they are willing to accept more peripheral C-3 District locations relative to other options will also occur over time as prospective tenants consider the advantages and disadvantages of the C-3 District and as the leases of existing tenants expire.

/36/ See Plan, pp. 20-37.

/37/ Policies for the North of Market Mixed Use District (NOM/MUD) have been proposed and were under review as of November 1983. (See North of Market Rezoning Study, San Francisco Department of City Planning, March 1983.) A new special use district is proposed to be developed for all of Chinatown. As of November 1983, this effort was just beginning.

/38/ Because of the proposed boundary changes, the subareas used in this EIR are not exactly comparable to the use districts proposed in the Plan. For example, future development in the YBC project area is assumed to occur according to the Redevelopment Plan for that area. However,

NOTES - Land Use and Real Estate Development (Continued)

when summarized by subarea, portions of YBC are included in Subareas 1, 2, 3 and 6 and YBC is not separately tabulated as a C-3-YBC district as proposed. Similarly, lots in Subarea 5 which would be changed from C-3-G to C-3-R by the Plan are considered for future development assuming the C-3-R zoning rules as proposed. However, for presentation purposes, future land use on these lots is included in the Subarea 5 totals, as is existing land use on these lots in the Land Use Setting. In other words, in the setting, existing land use for Subarea 5 includes only areas zoned C-3-G. However in this impact section, future land use for Subarea 5 describes the same lots, but includes a few areas with zoning other than C-3-G under the Plan. The Plan also proposes that the Subarea 2 parcels east of YBC be rezoned from C-3-S to C-3-O(SD). Since all affected areas are in Subarea 2, and the zoning for all of Subarea 2 exclusive of YBC would be changed, boundary issues are not raised.

/39/ Included in this category are all projects approved as of August 25, 1983 that were not under construction by mid-1982. Since construction of large office projects generally takes up to three years, projects that were not begun until after mid-1982 would not be fully constructed and ready for occupancy until after 1984. Projects already under construction in mid-1982 would be completed before or during 1984 and are included in the 1984 land use and real estate setting (see Tables IV.B.5 and IV.B.6).

/40/ The uses assumed for development in the Yerba Buena Center Redevelopment Project Area (YBC) are those defined by the YBC Main Program Alternative. A map showing the YBC Redevelopment Project Area within the C-3 District is included at the end of Appendix G, Figure G.2.

/41/ The space in projects approved as of August 25, 1983 and not under construction by mid-1982 represents updated totals from the figures presented in the Consultant's Report. The updated totals shown in Table IV.B.7 include the space in all of the projects that were approved but not under construction in mid-1982 (5.7 million sq. ft.) plus the space in projects under review in mid-1982 which were approved by August 25, 1983 (about 2.3 million of the 4.6 million sq. ft. previously under review). For consistency with the analysis of Alternatives in the Consultant's Report, the amounts of space in individual projects are those used in the Consultant's Report. In a few cases, the amounts approved differed slightly from the original amounts. Any variation between the totals shown in Table IV.B.7 and those on the Department of City Planning's list would be explained by this factor.

/42/ The employment forecasts are presented in Section IV.C, Business and Employment Impact. The methodology and basis for the forecasts are summarized in Appendix H, as is the procedure for "matching" employment growth and the supply of space.

/43/ The setting section explains that all of the space to be built by 1984 would not be absorbed by employment growth forecast to that time. Thus, some space in the 1984 land use setting would be available for

NOTES - Land Use and Real Estate Development (Continued)

occupancy in the 1984-1990 period. The analysis to determine when the space in approved projects would be absorbed assumes that the oversupply of space in 1984 would be absorbed, that the space in approved projects and in YBC would then be occupied, and that additional projects would be built and occupied by 1990 only if justified by the demand for space to accommodate employment growth.

The process of matching employment growth and space incorporates consideration of a vacancy factor. A long-term average office vacancy rate of five percent was assumed. Consequently, the amount of space forecast to be developed exceeds the amount that would be occupied, by five percent.

/44/ As of August 25, 1983, space in projects under review by the Department of City Planning totaled just over two million sq. ft. Additional projects proposed in late 1983 or 1984 could still be built and occupied by 1990.

/45/ It is assumed that the Plan would affect the amount of space and design of individual projects. The concern in this paragraph is whether the overall total space built in many different projects by 1990 would be affected by the rules of the Plan.

/46/ As of December 1983, a moratorium on approvals of major office building projects until adoption of a Downtown Plan in August 1984 had been proposed. The moratorium is expected to be considered by the City Planning Commission and the Board of Supervisors during January, 1984.

/47/ The methodologies for estimating uses demolished and for projecting conversions to office use are described in Appendix G.

/48/ The supplemental tables at the end of Appendix G identify the new construction, demolition, and conversions that account for the projected net changes in space 1984 to 1990.

/49/ The distinction between space in office buildings (including office, retail, and other uses) and office space (space in office use) is discussed in the setting section. The methodology for forecasting the mix of uses in space in new office buildings is described in Appendix G.

/50/ This estimate of additional hotel rooms does not include rooms in existing hotels that are improved to first-class status. The change in the supply of first-class hotel space due to renovation is reflected as an increase in hotel employment.

/51/ When the forecasts of employment growth were compared with the supply of hotel space in approved and YBC projects, the large number of rooms to be added was judged to be slightly higher than would be absorbed by the hotel forecast for 1990. Thus, occupancies could decline for a short time until demand adjusts. However, the number of rooms that might be considered an oversupply was less than the number in a single major hotel facility. Thus, the approved projects were all assumed to be built

NOTES - Land Use and Real Estate Development (Continued)

by the end of 1990. Because of this finding and the uncertainty of the duration of the recent recession, it is possible that 500 - 1,000 of the new rooms forecast for 1990 could occur just after that time.

/52/ In the tables in this section and in Appendix G, the numbers are thousands of gross sq. ft. of space. This is not to imply that the forecasts are unusually accurate. The numbers have not been rounded further to preserve the ability to add all figures and to ensure consistency from one table to another. There are large differences in the magnitudes of the numbers, among uses and subareas. For example, office space by subarea can be counted in the tens of millions, while industrial/warehouse/automotive space by subarea can only be counted by the tens of thousands. In order not to lose the latter type of information, the tables are rounded to thousands.

/53/ It is a coincidence that the amount of new office building construction forecast from 1990 to 2000 (8.4 million sq. ft.) is the same as the net addition of office space over this period (8.4 million sq. ft.). Table G.14 in Appendix G explains the derivation of the net addition of office space as the following: 8,400,000 sq. ft. would be built in new office buildings, minus 358,000 sq. ft. of new space to be occupied by non-office uses, minus 709,000 sq. ft. of existing office space to be demolished for new construction, plus 1,072,000 sq. ft. of space in existing buildings to be converted to office use, minus 8,000 sq. ft. of space in existing buildings to be changed from office to another use, equals 8,397,000 sq. ft. as the net change in space in office use. These figures show that the main reason why the new office building construction forecast is so similar to the forecast net change in office space is that the amount of space converted to office uses is almost the same as the amount of space demolished for new construction plus the space occupied by non-office uses in new office buildings.

/54/ These are the main policies which would affect the size of new buildings and the availability of sites of development. Other policies which would also contribute to these effects include: setbacks, open space requirements, rezonings, and the office and hotel policies in the C-3-R District. See Figure G.1 and the associated text in Appendix G which also describe the effects of various plan policies.

/55/ Transfer of development rights is designed to shift development pressure from an area or building that is considered worthy of preservation. The difference between the existing building space on a preservation site and the space that would be allowed under the base FAR (if the site were not designated for preservation) is a right to development that can be transferred to another site where new development is considered more appropriate. As proposed, TDRs could be transferred within use districts, and from any use district into Subarea 2, the Special Development District. The amount of building space represented by the unused FAR is the amount of space that can be added to a new development project, depending on height, bulk and other policies applicable to the new development site. A separate discussion of the TDR system is included later in this section.

NOTES - Land Use and Real Estate Development (Continued)

/56/ Construction cost estimates were prepared by Roger Boyer & Associates as a part of the construction feasibility analysis described in Appendix D.

/57/ As explained, a part of the Plan's strategy to redirect growth is to allow the transfer of TDRs into Subarea 2 (C-3-0(SD)) from all other use districts. This would only work if there is demand for TDRs in Subarea 2. The demand for TDRs depends on the extent to which it is feasible to develop large buildings. The difference between the amount of space to be developed in a large, new building and the amount allowed if that building were built to the base FAR determines the demand for TDRs. In other words, it must be feasible to develop a building that exceeds the base FAR if TDRs are to be used. The TDR system is discussed later in this section.

Appendix G describes the real estate feasibility testing that was done to evaluate the demand for TDRs and to forecast future real estate development and land use change under the Plan.

/58/ Appendix G describes the real estate market interactions which will occur as tenants, developers, lenders, and property owners adjust to changes in the policies regulating development in downtown San Francisco.

/59/ Section IV.C, Business and Employment Impact describes the location decisions of business activities of various types in terms of how each group is likely to react to the potential supply of space under the Plan.

/60/ The forecasts assume that there would be a five percent increase in the density of employment for each of the various business activities located in C-3 District office space. Changes in the overall average employment density of activities in office space depends on the future mix of business activities of various types as well as on the increased densities for each individual group. These changes are described in Section IV.C, Business and Employment Impact.

/61/ The space converted to office use would be industrial/warehouse space, auto repair shops and garages, and miscellaneous other space that would have been largely vacant for a period of time. The forecasts of space in these use categories account for conversions as described later in this section. Appendix G describes the methodology for estimating conversions.

Upgrading and remodeling would not add to the square footage of total office space. It would add to the supply of improved office space at higher rents.

/62/ This percentage approximates the trend of office development shifting south of Market east of YBC. If anything, this percentage might be high for construction during the 10 years from 1990 to 2000. If so, development would reach and probably exceed this percentage in the next decade after 2000. The pattern of shifts of activity reflected in the forecasts is more important than the percentage of total development that would occur in each area during a given period.

NOTES - Land Use and Real Estate Development (Continued)

/63/ If the South of Market Industrial Conservation Special Use District (SUD) Interim Controls (Ordinance 574-83, adopted November 28, 1983) were to remain in effect during the period of implementation of the Downtown Plan, then conversions in Subarea 3 (about one-half of which is included in the SUD) would occur to a lesser extent than forecast and described in the text. The effects of a long-term implementation of the South of Market SUD on impacts of the Downtown Plan are covered in Sections V.B and V.C, Land Use and Real Estate Development and Business and Employment Mitigation.

/64/ The assumptions about the amount of retail and branch bank space in new office buildings are described in Appendix G. Generally, the addition of retail space in new office development is not directly proportional to the additional retail demand from office employment growth. The analysis indicates that more retail space is generally included in office buildings than would be supported by the employment growth accommodated in that building. The policies of the Plan to discourage large retail projects in primarily office areas would result in a closer "match" between the convenience needs of workers and visitors to the office space and the amount of retail space added.

/65/ As explained previously, existing C-3 District office space would be used more intensively over time as a result of the Downtown Plan. Increased employment densities would accommodate employment growth in existing office space which would, in turn, support increased retail sales without increased retail space in office buildings. Thus, proportionally more growth in retail sales would occur in existing retail space and in retail space added in existing buildings than in the past. See notes 66 and 67, below.

/66/ Growth of retail activity in existing space would become relatively more important over time. Under the Plan, some of the increased retail sales would occur as greater sales per square foot of space for existing tenants and as changes from lower to higher sales volume tenants. Thus, there would be growth of retail sales without growth of retail space.

/67/ This would include space added by remodeling and redesign of lower floor space (basements, ground floor, mezzanines) and space added to retail use because of changes in use from other activities. For example, existing lower floor space could be converted to retail use from trade/customer service office, warehouse, or institutional uses. These changes could be accompanied by remodeling and redesign which increases the amount of leaseable area.

/68/ As in the 1984-1990 period, this estimate of additional hotel rooms does not include rooms in older hotels improved to first-class status. The increase in hotel employment accounts for this upgrading (see Section IV.C, Business and Employment Impact).

/69/ Hotel projects of 200 rooms or less would be small relative to the average size of 600 rooms for the hotel projects approved to be built during the 1984-1990 period. Many hotel operators would say that a 200-room

NOTES - Land Use and Real Estate Development (Continued)

facility is too small for an efficient operation. Generally, hotels of 200 rooms or less would be facilities without conference or meeting rooms and with few restaurants or shops.

/70/ The Plan states that in the C-3-R district, "hotels of more than 200 rooms could be permitted as conditional uses, but only if it can be shown that they will not disrupt traffic, transit, pedestrian flows, and the retail character of the district," (p.32). It is assumed that sites south of Market Street would have the best chance of satisfying these conditions.

/71/ The amount of conversion forecast for Subarea 3 might be somewhat less under the conditions of the South of Market Special Use District (see note 63). Nevertheless, given the strong demand for lower-rent office space under the Plan, it is likely that some conversions would occur, in spite of the Special Use District controls.

/72/ This section considers the supply of housing from a land use and real estate market perspective. It presents the 1990-2000 forecast of housing development in the C-3 District and describes potential changes in the existing C-3 District housing stock over time.

Housing is discussed in Section IV.D from a different perspective. That section considers the future residence patterns of C-3 District workers and the potential effects of downtown employment growth on the housing market in San Francisco.

/73/ Most (about 55 percent) of the residential hotels and other housing in Subarea 5 are located in the areas to be rezoned to the North of Market Mixed Use District. All of the housing in Subarea 7 would be rezoned to the Chinatown Special Use District.

/74/ The number of units projected to be built and the estimated prices are only approximations; they are not precise forecasts. Many factors are involved that are certain to change over the next decade. The estimates presented herein provide the basis for estimating impacts and allow comparison of the Plan with the Alternatives discussed in Section VII and previously evaluated in the Consultant's Report.

/75/ For residential hotels, about 48 percent of the total square footage of C-3 District space in 1990 would be included in the rezoned areas. For other housing, a lower share of about 43 percent would be in the rezoned areas.

/76/ See Plan, p. 44.

/77/ Shifts south of the C-3 District would be facilitated to the extent that: policies make lower-cost, lower-rise, large-lot construction feasible; allow conversions of existing, older space to office use; and do not require developer-participation in programs which add significantly to the cost of space, such as programs to provide transportation or housing. As explained from the perspective of business activity and employment,

NOTES - Land Use and Real Estate Development (Continued)

providing opportunities for lower-cost space outside the C-3 District would make a difference in total employment in San Francisco. It would determine the extent to which activities that do not locate in the C-3 District would choose another San Francisco location or a location outside the City. (See Section IV.C, Business and Employment Impact.)

On the other hand, policies such as those embodied in the South of Market SUD, which is designed to maintain the existing character of this area, would restrict the southerly expansion of the downtown area. This might result in the retention of some businesses that would have been displaced by office activities. The implications of both types of policies are discussed in Sections V.B and V.C, Land Use and Real Estate Development and Business and Employment Mitigation.

/78/ Regional analyses and forecasts by Recht Hausrath & Associates and by the Association of Bay Area Governments (ABAG) indicate that growth in business activity and employment outside of San Francisco will represent a larger percentage of regional growth in the future than occurred in the past. By 2000, space and employment in San Francisco will represent a smaller percentage of total regional activity than they represent in 1984. This general trend will occur for many reasons and would occur even without the Downtown Plan. This pattern is also discussed in the employment impact section (see Section IV.C).

/79/ The evaluation of TDR supply and demand was done in terms of square footage of space of TDRs supplied or demanded. Thus, the percentages included in this subsection to summarize TDR supply, demand, or the "match" between supply and demand are percentages of the total potential square footage of TDRs. The percentages do not refer to buildings. For example, 50 percent of the potential supply of TDRs measured in square feet of space would not necessarily reflect 50 percent of the buildings on sites with TDRs since the amount of TDRs varies among sites. In the same zoning district there would be a larger amount of space in TDRs on sites with small existing buildings and a smaller amount of TDRs on sites with large existing buildings.

/80/ The percentages used to describe the supply of TDRs are expressed as ranges because of possible variation in the estimates. This variation concerns the treatment of ground floor retail space in existing buildings in the C-3-0 and C-3-0(SD) districts for purposes of calculating the amount of TDRs potentially available. There is a definitional question of how this space would be counted and an estimating question of how much ground floor retail space there would be in those buildings which sell their TDRs. The assumptions made in developing the estimates of supply are described in Appendix G.

Overall, the treatment of ground floor retail space in existing buildings in the C-3-0 and C-3-0(SD) districts could make a difference in the estimated potential supply of TDRs from these districts of around 25 to 30 percent. If all existing rated buildings had ground floor space that was not counted as part of the building floor area from which the controlling base FAR is measured, the supply of TDRs would be larger than if this space were counted.

NOTES - Land Use and Real Estate Development (Continued)

/81/ In certain conservation districts, unrated buildings could be altered or replaced by new development up to the height limit to make the sites more compatible with surrounding buildings. Any unused floor area ratio (FAR) after such alteration or replacement would be treated as transferable development rights (TDRs). This policy would apply in Conservation Districts 3, 4, and 5 which are all in Subarea 1. The potential supply of TDRs would be relatively small, representing about three percent of the total potential supply of TDRs in the C-3 District.

/82/ The methodology for developing these estimates is described in Appendix G. As described in this Appendix, development potentials were estimated for the pool of sites with the greatest likelihood of being developed within a period of 20 to 30 years after projects already approved and in YBC have been built. Since it will take about five years for the approved and YBC projects to be built (1984 to late 1980's) the text refers to sites likely to be developed over the next 25 to 35 years. This would be around the years 2010 to 2020.

/83/ The range of estimates is large. Since TDR demand arises from the extent to which development could occur above the base FAR, differences in the estimates of the size of buildings make a proportionally larger difference in the demand for TDRs. The factors affecting the range of estimate are described in Appendix G.

/84/ The estimates of the square footage of transferable development rights (TDRs) were prepared separately for significant buildings (categories I and II) and contributory buildings (categories III and IV). Of the estimated total potential supply of TDRs from Subareas 3, 4, and 5, the square footage from significant buildings represents the majority. The square footage of potential TDRs for each category of buildings reflects both the number of buildings designated in each group and the amount of TDRs potentially available from those buildings.

/85/ The conclusions about the preservation of buildings in this subsection describe numbers or percentages of buildings with various characteristics. This differs from the previous discussion which considered the supply and demand of TDRs in terms of square footage of space (see note 79).

/86/ For estimation purposes, it was assumed that sites with few TDRs would include those with 10,000 sq. ft. or less of development rights.

/87/ The Downtown Plan requires new development to contribute to the "preservation and enhancement of existing open spaces and creation of additional open space...." (See Plan, p. 51.) Open space requirements are key elements of this strategy. The developers of new non-residential projects in the C-3 District would have to satisfy requirements for a specified amount of open space. (See Table III.1, Part IV.1.)

NOTES - Land Use and Real Estate Development (Continued)

/88/ About 510,000 sq. ft. of TDRs would be available from the potential Subarea 2 open space sites. This amount would not compete with the TDRs available from designated significant and contributory buildings. First, the TDRs from open space sites serve a unique purpose -- satisfying the open space requirement. Second, the amount of TDRs available from open space sites is not large enough compared to the total potential demand to detract from the ability to absorb the supply from designated buildings.

C. BUSINESS AND EMPLOYMENT

SETTING

C-3 District Background

Business Activities

San Francisco's C-3 District includes a wide variety of business activities. Table IV.C.1 summarizes these activities by employment and business activity./1/

Business activities occupying office space are grouped into two major categories based on differences in business functions, space needs, and workforce characteristics. The largest category includes management, information processing, and professional service offices. Throughout this EIR, this category is referred to as "management/technical office". The other category includes trade and customer service activities in office space. These activities are referred to in this EIR as "trade/customer service office"./2/

The category of management/technical office activities includes such establishments as corporate headquarters, data processing centers, major financial institutions, major utilities, diverse business and professional services, and government. Included in this category are activities which serve international, national, west coast, and local markets. The executive office functions and a large share of the administrative and professional service functions are centered in the financial district. The data processing functions, government offices, and other administrative and service activities are located in more peripheral areas throughout the C-3 District. In total, all of the office activities in this category represent about two-thirds of total C-3 District employment.

The trade/customer service office activities include the wholesaling, display, and customer service functions located in downtown office space. The apparel and merchandise marts and other offices for wholesale and manufacturers'

TABLE IV.C.1: C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY, 1981

Business Activity	Estimated 1981 Employment	Percent of Total Employment
Management/Technical Office (management, information processing, and professional service functions) (a)	172,550	63.8%
Manufacturing and Mining	18,220	
Finance, Insurance, Real Estate	68,580	
Business and Professional Services	40,650	
Transportation, Communications, and Utilities	28,740	
Government Office	16,360	
Trade/Customer Service Office (a)	34,770	12.9%
Wholesale and Manufacturing Sales	13,240	
Retail Services	16,300	
Branch Banks	5,230	
Retail Trade (restaurants and stores)	22,190	8.2%
Hotels (transient and residence)	13,300	4.9%
Cultural/Institutional/Educational	8,130	3.0%
Non-profit and Educational Facilities	4,390	
Theatres, Museums, Amusements, Institutions, Private Clubs	3,740	
Industrial/Warehouse/Automotive/Parking	6,930	2.6%
Building Maintenance/Security	5,200	1.9%
Construction	7,300	2.7%
TOTAL	270,370	100.0%

TABLE IV.C.1: C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY, 1981 (continued)

NOTE: Employment estimates were developed based on the Downtown EIR Employer Survey (see Appendix F and Appendix H) and the Downtown EIR Land Use Inventory (see Appendix C). The Employer Survey identified the mix of types of businesses and business functions in the various types of space (office, retail, industrial, etc.) and the employment densities for these activities. The Land Use Inventory identified the amount of space of each type in the C-3 District. Separate estimates were prepared for building maintenance and construction employment. The methodology is described in Appendix H.

(a) To describe both C-3 District office employment and space, the total employment for both categories of office activities in this table is comparable to the office space estimates in the single office category in the space table in the Land Use and Real Estate Development Setting section. Also see note 2.

SOURCE: Recht Hausrath & Associates

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sales representatives generally serve Northern California, regional, and local markets. Importers and exporters, many involved in international and particularly Pacific Basin trade, are also in this category. A third type of office activity in this group includes retail service businesses such as hair dressers, cosmetics specialists, tailors, travel agents, airline agencies, dentists, and doctors. Many of these activities are located in upper floor space in the Union Square area. Branch banks distributed throughout the area are also classified as customer service office. In total, all of these trade and customer service activities in office space represent about 13 percent of C-3 District employment./3/

Retail trade includes stores, restaurants, and bars which serve City residents, tourists, downtown workers, and residents of other Bay Area counties often attracted for shopping and entertainment. It is estimated that, in 1981, about 31 percent of C-3 District retail sales were purchases by downtown workers, about 31 percent by tourists, and the remaining 38 percent by residents of the City and other Bay Area counties./4/

Hotels in the study area provide overnight accommodations for many of the City's business, convention, and recreational visitors. Several of them also provide banquet services for major civic and business events. A small amount of employment in residential hotels is counted in this category.

The C-3 District also includes a variety of educational, entertainment, and institutional uses serving local, regional, and tourist markets.

Manufacturing, storage, distribution, and repair activities also occur in the study area in industrial and warehouse type space. Businesses in these categories are located at the fringes of the C-3 District and often serve other downtown activities. Many similar businesses serving the downtown core are located outside the boundaries of the C-3 District, generally further south of Market.

There are other types of workers downtown that are related to the previously described activities typical of a central business district. It is estimated that there are about 5,200 building maintenance and security jobs downtown. Construction activities downtown vary according to the amount of new development. For 1981, it is estimated that there were about 7,300 construction jobs in the C-3 District. These are in addition to construction firm offices permanently located in this area. Estimates were not made for messengers, delivery persons, taxi and bus drivers, and similar "floating" jobs. There are definitional problems and estimating difficulties because many split their workday between the C-3 District and locations elsewhere in the City./5/

In total, it is estimated that C-3 District employment in these activities was 270,000 jobs in 1981./6/

Employment Densities

Employment density, expressed as gross square feet of occupied building space per employee, varies by the business activities and functions performed in the space./7/ It also often varies by the particular operations of different companies. Average employment densities for business activity groups are shown in Table IV.C.2.

Among management/technical office activities, manufacturing and mining headquarters and business and professional services tend to have lower than average employment densities (more space per employee), transportation, communication and utilities (TCU) is about average, and finance, insurance and real estate (FIRE) and government offices have higher than average densities. Comparisons of densities for data centers and administrative/executive offices do not indicate significant differences on the average. Some of the data centers surveyed had higher densities while others had lower densities. The differences are probably dependent upon the relative proportions of processing by computer and labor.

The higher average density for trade/customer service office activities largely reflects the higher densities for wholesale and import/export activities conducted in person or via telecommunications, and the higher densities for retail customer services (travel agents, hair dressers, etc.). This business activity also includes showroom facilities for furniture and other large goods. The employment density for this type of space activity is lower than the overall average for the group.

The average for retail trade reflects a mix of restaurants and bars with higher densities, of smaller retail shops with higher to average densities, and of department stores with lower densities because of the space needed to display merchandise.

TABLE IV.C.2: C-3 DISTRICT BUSINESS FUNCTIONS AND EMPLOYMENT DENSITIES, 1981

Business Activity	Functions	Estimated Average Employment Density (gross square feet per employee) (a)
Management/Technical Office	Executive, Administrative Information Processing	276 (a)
Trade/Customer Service Office	Wholesale, Display/Showroom, Customer Service, Branch Banking	208 (b)
Retail Trade	Sales, Eating and Drinking	350
Hotels (c)	Transient Overnight Accommodations, Retail, Eating and Drinking	759 (d)
Cultural/Institutional/Educational	Administrative, Educational, Entertainment	777
Industrial/Warehouse/Automotive	Manufacturing, Storage, Distribution, Repair	783
Parking	Parking	5,100 (e)

NOTE: The estimated average employment densities are developed from the Downtown EIR Employer Survey data. Appendix H describes the methodology and provides more detailed information on employment densities.

(a) Gross square feet of occupied building space per employee. Does not include allowance for vacant, unoccupied space. See note 7.

(b) All office activities together (management/technical and trade/customer service) average 265 gross sq. ft. per employee.

(c) Average employment density for residence hotels is about 2,500 gross sq. ft. per employee.

(d) On a per room basis, transient hotels average 0.74 employees per room.

(e) Gross square feet of parking space in lots and buildings.

SOURCE: Recht Hausrath & Associates

Employment by Subarea

The majority of C-3 District employment is located in Subarea 1, as shown in Table IV.C.3. Subareas 6 and 5 have the next largest amounts of employment. The differences in employment among subareas arise primarily from the following factors: different land areas, different densities of development, and different types of business activities with different densities of employment./8/

The comparison of the percentage distribution of employment among subareas and the percentage distribution of floor area by subareas indicates the effect of the third factor above: different mixes of business activities with different employment densities. For example, Subarea 1 has 54 percent of the employment and 49 percent of the building space. This makes sense because Subarea 1 has mainly office activities which have higher employment densities than hotels, industrial, or cultural uses. The opposite is true for Subarea 3 which has a greater mix of the activities with lower employment densities.

Comparison With Citywide Employment

Employment in the C-3 District can be compared with total City employment only if it is summarized into the standard industrial categories used in published employment statistics. Table IV.C.4 provides such a comparison.

It is estimated that just less than one-half of the City's employment is in the C-3 District. This share varies among industry categories. Those categories with the largest shares in the study area are TCU, FIRE, hotel, and business and professional services.

Employment by these standard categories cannot be easily related to business activities and type of space. For example, it may seem odd that nearly one-half of the City's manufacturing and mining employment is in the C-3 District. However, most of that employment is involved in office functions (e.g. executive and management functions) and located in office space as

TABLE IV.C.3: C-3 DISTRICT EMPLOYMENT BY SUBAREA, 1981 (a)

Subarea	Estimated Employment, 1981	Distribution Of C-3 District Employment	Distribution of C-3 District Commercial Building Space (b)
1	139,660	54.2%	49.1%
2	19,250	7.4%	5.8%
3	10,560	4.1%	5.8%
4	15,350	6.0%	6.3%
5	26,200	10.2%	16.6%
6	36,430	14.1%	12.9%
7	10,420	4.0%	3.5%
Total By Subarea	257,870	100.0%	100.0%
Building Maintenance and Construction Not Allocated by Subarea	12,500		
TOTAL	270,370		

NOTE: Based on Downtown EIR Employer Survey and Land Use Inventory as described in Appendix H.

(a) See Figure II.C.1 for map of C-3 District subareas.

(b) Percent of total gross square feet of building space, excluding parking and housing. See Table IV.B.1 for detailed distribution of space by land use and subarea.

SOURCE: Recht Hausrath & Associates

shown in Table IV.C.5. The table indicates that except for retail, hotel, and construction employment, most study area employment is engaged in office activities and located in office space.

TABLE IV.C.4: COMPARISON OF CITYWIDE AND C-3 DISTRICT EMPLOYMENT, 1981

Industrial Classification	San Francisco Employment (a)	Estimated C-3 District Employment (b)	C-3 District Share of Citywide Total (c)
Manufacturing and Mining	52,700	24,280	46%
Transportation, Communications, Utilities	54,100	32,960	61%
Wholesale Trade	37,200	12,470	34%
Retail Trade	69,300	22,190	32%
Finance, Insurance, Real Estate	87,900	73,810	84%
Services			
Hotels	15,600	13,300	85%
Retail Services	40,700 (d)	16,890	41%
Business and Professional Services	96,100 (e)	49,770	52%
Government	87,400	17,400	20%
Agriculture	500	---	---
Construction	22,800	7,300 (f)	32%
Subtotal	564,300	270,370	
Self-Employed	25,000 (g)	(h)	
TOTAL	589,300	270,370	46%

TABLE IV.C.4: COMPARISON OF CITYWIDE AND C-3 DISTRICT EMPLOYMENT, 1981 (continued)

(a) State of California Employment Development Department (EDD), Annual Average Wage and Salary Employment, March 11, 1981 series. See Appendix H for consideration of other citywide sources and how EDD employment estimates compare with these other employment estimates.

(b) Recht Hausrath & Associates (RHA) estimates based on Downtown EIR Employer/Employee Survey and Land Use Inventory as described in Table IV.C.1 and Appendix H.

(c) The C-3 District shares for individual industries may be high, because the C-3 District employment figures include self-employed workers and the Citywide data does not. The C-3 District share of total employment accounts for this difference.

(d) Includes personal services, auto and miscellaneous repair services, motion pictures, amusements and recreation, and health services including hospitals (Standard Industrial Classifications (SIC) 72, 75, 76, 78, 79, 80).

(e) Includes business, legal, miscellaneous, professional, educational, museum, membership organizations and social services (SIC's 73, 81, 82, 83, 84, 86, 89).

(f) Estimate for the C-3 District includes only employment directly related to building activity in the area. Employment in large, diversified firms involved in construction elsewhere is included in the services group.

(g) Recht Hausrath & Associates estimate based on Bureau of Economic Analysis (BEA) figure of 25,700 proprietors employed in San Francisco in 1979 (BEA Regional Economic Information System, Employment by Type and Broad Industrial Source 1974-79, April 1981). The number of proprietors was in the range of four to five percent of total wage and salary employment 1974-1979.

(h) Self-employed workers in the C-3 District are included in the employment estimates for each industry group.

SOURCE: Recht Hausrath & Associates

TABLE IV.C.5: C-3 DISTRICT OFFICE EMPLOYMENT BY STANDARD INDUSTRIAL CLASSIFICATION, 1981

Industrial Classification	Estimated C-3 District Employment (a)	Estimated C-3 District Office Employment (b)	C-3 District Office Employment As A Percent Of Total Estimated C-3 Employment
Manufacturing and Mining	24,280	20,770	86%
Transportation, Communications, and Utilities	32,960	32,960	100%
Wholesale Trade	12,470	10,700	86%
Retail Trade	22,190	0 (c)	--
Finance, Insurance and Real Estate	73,810	73,810	100%
Services			
Hotels	13,300	0	--
Retail Services	16,890	12,070	71%
Business and Professional Services	49,770	40,650	82%
Government	17,400	16,360	94%
Construction	7,300	0	--
TOTAL	270,370	207,320	77%

(a) As shown in Table IV.C.4.
(b) Includes management/technical and trade/customer service office activities from Table IV.C.1.
(c) Retail trade activities located in the lower floors of office buildings are not categorized as office activities in office space, but as retail activities in retail space (even if the retail space is part of an office building).

SOURCE: Recht Hausrath & Associates

Employment Growth Trends

Total employment in San Francisco increased by 108,800 jobs from 1972 to 1981 (see Table IV.C.6). This represents an increase of about 24 percent and an average annual compound rate of growth of 2.4 percent. The largest increases in employment were in business and professional services, FIRE, and retail trade which together accounted for three-fourths of citywide job growth. The highest rates of growth were in business and professional services and in hotel employment.

Since historical employment statistics are not available for the C-3 District, trends must be approximated from citywide data as described in Table IV.C.6.

It is probable that employment in the C-3 District increased as a share of total City employment over this nine-year period. Much of the high growth in FIRE and in hotels occurred in the study area, since it includes most of the employment in these categories. A major share of the large growth in business and professional services also occurred in the C-3 District because the high-growth business activities within this category are those that are concentrated in the downtown area (business, legal, and professional services as opposed to educational and social services, museums and membership organizations). It is also likely that employment in manufacturing and mining headquarters offices in the C-3 District grew at a faster rate than the citywide employment in this category and that wholesale activities in offices also experienced higher than average rates of growth.

Job Characteristics: Occupations, Wages and Salaries

Employment in the C-3 District includes jobs in a variety of occupations. Wages and salaries for these jobs also cover a wide range. A summary of occupations and wages and salaries for different types of business activities is provided in Table IV.C.7./9/

The different mix of occupations among business activities reflects the different functions that each performs. For example, hotels employ mainly service workers (to provide lodging and food services) and clerical workers

TABLE IV.C.6: EMPLOYMENT GROWTH, SAN FRANCISCO AND C-3 DISTRICT, 1972-1981

Industrial Classification	Citywide Employment Growth 1972-1981	Percent Of Total Employment Growth	Annual Compound Growth Rate	Comments Regarding Growth Rates for C-3 District Employment, 1972-1981
Manufacturing and Mining	3,000	2.8%	+0.66%	Probably higher growth in study area office activities offset by slower growth or decline in manufacturing activities in industrial space elsewhere in the City. Of note is the citywide growth of manufacturing employment since 1976 which reverses the declines which had occurred 1960 to 1976.
Transportation, Communications, Utilities	1,000	0.9%	+0.21%	Similar growth in study area.
Wholesale Trade	1,000	0.9%	+0.30%	Probably higher growth in study area office activities offset by slower growth or decline in wholesale activities in industrial space elsewhere in the City.
Retail Trade	15,900	14.6%	+2.94%	Probably slightly lower rate of growth in study area retail employment. Retail sales growth has exceeded employment growth and shows a somewhat different growth pattern. Most growth in apparel, specialty goods and eating and drinking.
Finance, Insurance, and Real Estate	24,400	22.4%	+3.68%	Similar growth in study area.

TABLE IV.C.6: EMPLOYMENT GROWTH, SAN FRANCISCO AND C-3 DISTRICT, 1972-1981 (continued)

Industrial Classification	Citywide Employment Growth 1972-1981	Percent Of Total Employment Growth	Annual Compound Growth Rate	Comments Regarding Growth Rates for C-3 District Employment, 1972-1981
Services				
Hotels	5,600	5.1%	+5.07%	Similar growth in study area.
Retail Services	7,900	7.3%	+2.39%	Probably similar rate of growth in study area but lower amount of growth because of large growth in health services elsewhere in the City.
Business and Professional Services	42,200	38.8%	+6.64%	Higher growth in study area because of strong growth of business, legal, and miscellaneous professional services.
Government	2,500	2.3%	+0.32%	Similar growth in study area.
Agriculture	200	0.2%	+5.84%	NA
Construction	5,100	4.7%	+2.85%	Probably higher growth in study area because of large amount of new construction downtown.
TOTAL	108,800	100%	+2.41%	

NOTE: There is no historical information on employment in the C-3 District. Therefore, statistics for a larger area (the City) are reviewed with considerations as to both characteristics of the share of City employment in each industrial classification that occurs in the C-3 District and how the probable growth patterns of that share compared to the citywide pattern.

SOURCE: State of California Employment Development Department Annual Average Wage and Salary Employment, March 1981 and Recht Hausrath & Associates.

TABLE IV.C.7: OCCUPATION AND WAGE/SALARY DISTRIBUTIONS FOR C-3 DISTRICT BUSINESS ACTIVITIES, 1981

Occupations	Total C-3 District Jobs 1981		Business Activity					
			Management/ Technical Office	Trade/ Customer Service Office	Retail	Hotel	Cultural/ Institutional/ Educational	Industrial/ Bldg. Maint./ Construction
	No.	%	%	%	%	%	%	%
Professional/ Technical	64,500	23.9	34	7	1	4	47	0
Managerial/ Administrative	51,900	19.2	20	35	9	3	21	5
Clerical	77,180	28.5	37	22	4	18	22	1
Sales	18,210	6.7	3	6	48	2	small	0
Service	26,280	9.7	1	2	36	68	8	33
Crafts, Operatives and Other	32,300	12.0	5	28	2	5	2	61
Total	270,370	100.0%	100	100	100	100	100	100
Wages and Salaries (1982 Dollars)								
Less than $12,000	29,840	11.0	8	22	28	2	17	3
$12,000 - 14,999	53,130	19.7	12	18	38	71	25	31
$15,000 - 24,999	88,800	32.8	37	21	33	21	28	30
$25,000 - 49,000	74,510	27.6	31	33	1	6	29	36
$50,000 - 74,999	13,700	5.1	7	3	0	small	1	0
$75,000 and above	10,390	3.8	5	3	0	small	0	0
Total	270,370	100.0%	100	100	100	100	100	100
Percent Part-Time	12.0%		4	23	39	15	37	NA

TABLE IV.C.7: OCCUPATION AND WAGE/SALARY DISTRIBUTIONS FOR C-3 DISTRICT BUSINESS ACTIVITIES, 1981 (Continued)

NOTE: With the exception of information for building maintenance and construction employment, this table shows results of the Downtown EIR Employer Survey. See Appendix F for a description of the survey methodology. The percentages are of jobs (full-time and part-time) and not necessarily employees. In the case of part-time jobs, it is possible that one employee could hold two jobs. With job sharing, it is also possible that one full-time job could be held by two workers. The information for business activities is provided to highlight the differences among these groups. It is likely that the figures for jobs in the C-3 District are more accurate than are the percentages for individual groups. Survey results from industrial, parking, and automotive businesses (limited responses) were combined with RHA estimates for building maintenance and construction jobs.

Building maintenance and security employment is in the services occupational category. (Employment Development Department, Occupations in Selected Industries, San Francisco City and County, September 1981). Estimates of occupation and wage and salary characteristics for construction employment are based on conversations with Stan Smith, San Francisco Building and Construction Trades Council, October 27, 1982.

SOURCE: Recht Hausrath & Associates

(for reservations and bookkeeping), while retail trade primarily employs sales workers (to sell merchandise), service workers (for restaurant and bar service), and managers (to oversee store operations).

Management/technical office activities employ a large share of clerical workers involved in executive/administrative functions (corporate headquarters) and in information processing (data centers). The managers in this group also tend to be divided between those two functions. Workers in the skilled crafts and operative occupations in offices are generally involved in information processing functions (computer and telecommunications, systems operations, and main- tenance). The professional occupations are those providing technical and business expertise (lawyers, consultants, accountants, etc.) either in smaller firms or as part of the executive/ administrative functions of larger organizations.

The types of firms and functions in trade/customer service office activities have an occupational mix different from that of primary office activities. The large share of managerial jobs reflects the prevalence of small firms with on-site managers and proprietors. The clerical workers in trade/customer service office activities include bank tellers, counter clerks, receptionists, bookkeepers, and secretary/typists. Trade/customer service office activities also employ operatives as delivery persons, tour leaders, dress makers, photo processors, and machine operators (ticket machines, jewelry polishers, and other precision machines)./10/

The occupations within the group of cultural/institutional/educational activities reflect the office functions of non-profit organizations, the high share of professionals employed in education, the service jobs in private clubs and lodges, the on-site managerial jobs for all of these operations, and the wide range of jobs in the performing arts.

Building maintenance and parking activities employ service workers. Industrial activities employ skilled craft workers and operatives, while construction employment is primarily in the skilled crafts occupations.

The distribution of employees across wage and salary categories also shows differences among business activity groups (see Table IV.C.7). These differences reflect the mix of occupations within a group (described above), the range of salaries within occupations, and the extent to which jobs are part-time.

Retail trade and hotels have the largest shares of jobs in the lower wage categories. The wage and salary figures shown in Table IV.C.7 do not include tips, which are particularly important for restaurant and hotel workers. The high share of retail jobs in the lowest salary category might also reflect the relatively high percentage of jobs which are part-time. The absence of retail jobs in the highest wage categories reflects the fact that company owners and corporate staff (for chain operations) were not located on-site for the establishments surveyed for the Downtown EIR Employer Survey.

Management/technical office activities have the highest overall wages and salaries. This is consistent with the high shares of professionals and managers, clerical workers with salaries at the higher end of the range for those jobs, and the low percentage of part-time jobs. Trade/customer service office activities include a large number of part-time positions and a high share of operatives in the lower salary ranges, explaining the different wage and salary distribution shown in Table IV.C.7.

Combining information about business activities, occupations, and wages and salaries provides a description of the skill and experience levels for C-3 District job opportunities. Generally, jobs with salaries less than $15,000 include entry level positions without specific education and experience requirements. These jobs represent 31 percent of C-3 District jobs. They are primarily in sales, service, clerical, and operative occupations. About 60 percent are jobs in office activities and about 30 percent are in retail trade and hotels.

Jobs paying $15,000 to $24,999 include another 34 percent of C-3 employment. This group includes a large number of clerical office jobs and jobs for entry level professionals. The remaining 35 percent of jobs, paying over $25,000, includes primarily professional and managerial jobs, many of which are more senior positions requiring higher education and more years of experience.

Demographic Characteristics of C-3 District Workers

Demographic characteristics of the C-3 District workforce provide further description of the types of employees who hold different types of jobs. A summary of these demographic characteristics is presented in Table IV.C.8.

Overall, the C-3 District workforce is fairly young (41 percent are ages 25-34; 65 percent are ages 25-44) and includes slightly more males (53 percent are males) than females. About one-quarter are Asian, about two-thirds are white, and about 10 percent are black and other races. About six percent are of Spanish origin. About 28 percent were not born in the United States. Over half (57 percent) live in San Francisco./11/

Office workers employed in management/technical office activities are fairly similar to the overall average since they make up such a large share of the total. Comparisons indicate that they tend to be older than average, include slightly more females than males, and include proportionally fewer minority group members. They also have a lower share of workers who are City residents.

Those employed in trade/customer service office activities include many who are young, male, foreign born, Asian and San Francisco residents. While it is probable that this pattern is affected by the relatively small sample size for such a diverse group of firms, it does highlight the large share of entry level jobs in the retail services group and the importance of Asian businesses and workers in the wholesale and retail service activities in the C-3 District.

Retail workers are also young, and over one-half are women. They tend to be white, City residents and not to be foreign born. A relatively large share of retail workers are of Spanish origin.

TABLE IV.C.8: DEMOGRAPHIC CHARACTERISTICS OF C-3 DISTRICT WORKERS, 1981

		Workers By Business Activity				
	Total C-3 Workforce	Management/ Technical Office	Trade/ Customer Service Office	Retail	Hotel	Cultural/ Institutional/ Educational
	%	%	%	%	%	%
Age						
Under 25	11.8	11	4	16	13	2
25 - 34	41.3	34	69	51	39	52
35 - 44	23.3	27	18	13	21	26
45 - 54	13.6	17	3	10	10	11
55 Plus	10.0	11	6	10	17	9
Sex						
Female	46.5	51	22	52	60	49
Male	53.5	49	78	48	40	51
Foreign Born						
Yes	27.9	22	65	6	56	42
No	72.1	78	35	94	44	58
Race/Ethnicity						
Asian	25.4	14	66	22	42	33
Black	5.7	7	1	1	11	10
White	64.2	74	32	73	29	55
Other	4.7	5	1	4	18	2
Spanish Origin (a)	6.8	7	1	13	13	5
San Francisco Resident						
Yes	56.8	49	65	77	82	73
No	43.2	51	35	23	18	27

TABLE IV.C.8: DEMOGRAPHIC CHARACTERISTICS OF C-3 DISTRICT WORKERS, 1981 (Continued)

	Total C-3 Workforce	Workers By Business Activity				
		Management/ Technical Office	Trade/ Customer Service Office	Retail	Hotel	Cultural/ Institutional/ Educational
	No.	No.	No.	No.	No.	No.
Job Tenure (b) (average number of years)						
• Work Downtown	7.9	9.1	4.8	7.9	6.6	4.8
• At Present Employer	6.1	7.2	3.6	4.9	4.7	2.9
• At Present Work Address	3.8	4.4	1.9	3.2	4.4	2.4

NOTE: The information in this table is for C-3 District employees and is tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) Employee responses are tabulated by the business activity of their employer. The information is presented to highlight differences among groups. The overall pattern is more accurate than the percentage for an individual group particularly for the trade/customer service office and cultural/institutional/educational groups where the sample size is small relative to the large variety of types of businesses and workers in these categories. Data are not included here for workers in the industrial group because of the small number of responses received. Section IV.D, Residence Patterns and Housing, contains more detailed information on employee residence patterns and on demographic characteristics by county of residence.

(a) Spanish origin was a separate response from the ethnicity response reported above.

(b) These responses represent the average number of years employed when interviewed. The average, total length of time would be longer since tenure for most of those interviewed would continue beyond the survey date. The average, total number of years can be estimated by doubling the figures shown here (as explained in note 13).

SOURCE: Recht Hausrath & Associates

Hotel workers show more differences from the overall average. They include a higher than average share of both younger and older workers; they have the highest share of women workers; over one-half are foreign born; and they have higher than average shares of workers who are Asian, black, Spanish-origin, and of other ethnic groups (Pacific Islanders, South American, Mexican, Puerto Rican, etc.). They also have the highest share of City residents.

Job tenure characteristics show a very dynamic pattern. On the average, when interviewed, employees had worked in downtown San Francisco for eight years, had worked for their present employer for six years, and had been at their current work address almost four years./12/ These figures represent about one-half of the average, total number of years that employees work in the C-3 District, work for one employer, and work at one work address./13/ Among the business activities, management/technical office shows the most stable pattern, while the other groups show more turnover.

The survey responses also indicate that each year about 20 percent of the workforce is employed downtown for the first time./14/ This change results from the growth of employment, from the movement of businesses in and out of the C-3 District, and from the movement of workers who change their place of work (between C-3 District and other locations). This last factor probably has the most effect on the number of persons newly employed in the C-3 District each year. The figures also indicate that about 27 percent of the workforce changes jobs (employers) each year./14/ This reflects all of the factors mentioned above, as well as changes made among jobs within the C-3 District.

Household Characteristics of C-3 District Workers

Information was also collected about C-3 District worker households in the Downtown EIR Employee Survey. The summary in Table IV.C.9 provides further insights into the nature of the downtown workforce./15/

Overall, about 41 percent of the workers reside alone or in households of unrelated individuals. Forty-six percent are in married couple households. About one-third of the households have children./16/ On the average, workers in the C-3 District live in households with 2.7 persons, 0.6 children (under 18 years of age), and 1.8 workers./17/

Comparison of household demographics among business activities indicates no major differences except for hotel workers. Hotel worker households are larger and include more families and more children. Of note is the relatively high share of hotel workers in households with two or more families. Hotel worker households also have more workers per household, reflecting the effect of two or more families living together and of households with children who are employed.

The distribution of downtown worker household incomes is also shown in Table IV.C.9. Household incomes combine the wages and salaries of all household workers as well as income from other sources (pensions, investments, tips, etc.). The households of workers in office activities tend to have higher incomes. Retail and hotel worker households have lower than average household incomes and include fewer numbers in the higher income categories.

Comparison between the overall distribution of worker household incomes and wages and salaries (Table IV.C.7) generally indicates that household incomes are higher than wages and salaries. This is expected, since on average, there is more than one worker per household./18/

TABLE IV.C.9: HOUSEHOLD CHARACTERISTICS OF C-3 DISTRICT WORKERS, 1981

	Total C-3 District Workforce	Workers By Business Activity				
		Management/ Technical Office	Trade/ Customer Service Office	Retail	Hotel	Cultural/ Institutional/ Educational
Household Composition	%	%	%	%	%	%
Single Individual	23.9	28	9	31	19	22
Unrelated Individuals	17.5	12	41	23	14	39
Couple - No Children	20.2	21	21	18	14	13
Couple - With Children	25.9	26	25	15	32	17
Single-Parent	7.6	9	3	4	6	7
Two or More Families	2.8	2	1	4	14	1
Other	2.1	2	small	5	1	1
	No.	No.	No.	No.	No.	No.
Persons Per Household	2.7	2.5	2.5	2.5	3.7	2.4
Children Per Household	0.6	0.5	0.4	0.4	1.4	0.6
Workers Per Household (a)	1.8	1.7	1.6	1.9	2.2	1.7

TABLE IV.C.9: HOUSEHOLD CHARACTERISTICS OF C-3 DISTRICT WORKERS, 1981 (Continued)

	Total C-3 District Workforce	Workers By Business Activity				
		Management/ Technical Office	Trade/ Customer Service Office	Retail	Hotel	Cultural/ Institutional/ Educational
	%	%	%	%	%	%
Household Incomes (1981)						
Less than $12,000	13.4	5	43	18	29	28
$ 12,000 - 14,999	6.1	6	3	12	13	7
$ 15,000 - 24,999	23.4	25	12	36	24	25
$ 25,000 - 49,999	32.1	36	13	29	28	32
$ 50,000 - 74,999	17.8	19	25	5	6	8
$ 75,000 - 99,999	4.5	6	1	0	small	small
$100,000 Plus	2.7	3	3	0	small	small

NOTE: The information in this table is for the households of C-3 District employees as tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) Employee responses are tabulated by the business activity of their employer. The information is presented to highlight differences among groups. The overall pattern is more accurate than the percentage for an individual group particularly for the trade/customer service office and cultural/institutional/educational groups where the sample size is small relative to the large variety of types of businesses and workers in these categories. Data are not included here for workers in the industrial group because of the small number of responses received. More detail on employee households by county of residence and type of housing is provided in the housing section (IV.D.).

(a) These responses count all workers in employee households, including those who work in the C-3 District and those who are employed elsewhere. Estimates of C-3 District workers per household (excluding other workers) are presented in Residence Patterns and Housing Setting (Table IV.D.3), tabulated for employee households by county of residence. See note 17.

SOURCE: Recht Hausrath & Associates

C-3 District 1984 Setting

Business Activities and Employment

Economic analysis of business activities and employment produced forecasts of future C-3 District employment and job growth./19/ The 1984 employment setting includes three years of growth from the 1981 situation. Employment by business activity and subarea for 1984 is summarized in Table IV.C.10.

Employment growth is expected in all business activity groups except one, with the strongest growth in office activities. The decline is expected in the industrial/warehouse/automotive/parking group and reflects the movement of these types of uses out of the C-3 District.

Since the 1984 setting reflects the projects under construction as of mid-1982, the distribution of employment growth among subareas largely reflects the locations of these projects. It also includes employment changes in locations where the conversion of some existing space to office uses is expected.

Comparison of forecast employment growth 1981 to 1984 and the space added during that period (see Land Use and Real Estate Development Setting, Section IV.B) indicates that the increase in the supply of space is larger than the increase in the demand for space as indicated by the employment analysis. Thus, not all of the space available in 1984 is expected to be fully occupied by that time./20/

In addition to C-3 District permanent employment, construction employment is expected to average 5,270 jobs per year over the 1981 to 1984 period.

Occupations and Wages and Salaries

The number of jobs with the characteristics previously described in Table IV.C.7, was estimated for 1984 and is summarized in Table IV.C.11. These estimates assume that there would be no major changes in the distribution of characteristics for each business activity group between 1981 and 1984./21/

TABLE IV.C.10: ESTIMATED C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY AND SUBAREA, 1984

	Subareas								
Business Activity	1	2	3	4	5	6	7	Total C-3 District	Percent of Employment
Office (a)	141,400	18,860	6,990	13,870	11,450	26,190	4,460	223,220	79.5%
Retail Trade	5,850	470	1,000	890	3,370	7,320	4,300	23,200	8.3%
Hotel	2,590	--	390	70	7,510	3,150	110	13,820	4.9%
Cultural/Institutional/Educational	1,410	160	950	320	3,330	660	1,510	8,340	3.0%
Industrial/Warehouse/Automotive/Parking	430	1,130	2,990	210	1,370	284	90	6,500	2.3%
Total Employment Allocated To Subareas	151,680	20,620	12,320	15,360	27,030	37,600	10,470	275,080	
Percent of Employment	55.1%	7.5%	4.5%	5.6%	9.8%	13.7%	3.8%	100%	
Building Maintenance	--	--	--	--	--	--	--	5,780	2.0%
TOTAL (b)								280,860	100%

NOTE: Based on employment analysis described in Impact section and in Appendix H. These 1984 figures are estimates of employment in 1984 based on the employment forecasts developed for the period 1981 to 1990. See note 20.

(a) Includes both management/technical office and trade/customer service office.

(b) Does not include construction employment, expected to average 5,270 jobs per year over the 1981 to 1984 period.

SOURCE: Recht Hausrath & Associates.

TABLE IV.C.11: C-3 DISTRICT EMPLOYMENT BY OCCUPATION AND WAGES AND SALARIES, 1984 (a)

Occupations	Jobs	Percent
Professional/Technical	69,720	24.8%
Managerial/Administrative	54,510	19.4%
Clerical	82,490	29.4%
Sales	19,000	6.8%
Service	27,760	9.9%
Crafts	13,730	4.9%
Operatives	13,440	4.8%
Other	210	small
TOTAL	280,860	100%

Wages and Salaries (1982 Dollars)	Jobs	Percent
Less than $12,000	31,720	11.3%
$12,000 - 14,999	55,260	19.7%
$15,000 - 24,999	95,020	33.8%
$25,000 - 49,999	72,800	25.9%
$50,000 - 74,999	15,060	5.4%
$75,000 and above	11,000	3.9%
TOTAL	280,860	100%

NOTE: Based on Downtown EIR Employer Survey and Employment Analysis. See Appendix H for more detail.

(a) Includes permanent C-3 District employment and excludes construction labor.

SOURCE: Recht Hausrath & Associates

IMPACT

Downtown Plan Forecast Overview

The analysis of future potentials for economic expansion in the C-3 District under the Downtown Plan was approached from the perspectives of the different business activities described in the preceding setting section. This economic analysis included review of recent employment trends and historic patterns, identification of the key factors in the location decisions of firms of various types, consideration of geographic areas competitive with downtown San Francisco and review of existing forecasts relevant to each activity. A major component of this analysis was the Downtown EIR Employer Survey which included interviews with decision-makers at 58 establishments in the C-3 District, including representatives of the major downtown employers.

Within the overall context of downtown growth potentials, the Downtown Plan employment forecasts reflect the real estate market conditions that would exist in the C-3 District under the Plan. The supply side of these real estate market conditions was described in Section IV.B, Land Use and Real Estate Development Impact. This section, IV.C Business and Employment Impact, describes the demand perspective on the real estate market conditions that would exist under the Downtown Plan. The potentials for employment growth in the various business activities with different preferences for C-3 District locations and different rent-paying abilities provide the demand for C-3 District space. The forecasts of C-3 District growth are determined by the reactions of space demanders to the supply of space potentially available under the Downtown Plan.

The demand and supply interactions that result in the forecast of C-3 District employment growth and development to 1990 and 2000 are incorporated in the "matching" process. This forecast methodology involved: 1) "matching" each business activity's demand for space with the potential amounts and types of space supplied at various locations, 2) considering how rents would change, and 3) completing the forecast based on the estimated strength of demand at the estimated rents. See Appendix H in the Downtown EIR Consultant's Report for detailed descriptions of the forecast methodology.

In this EIR, the forecasts of real estate development and employment growth are described as "impacts" of the Downtown Plan. The land use and real estate development impacts of the Plan are expressed in terms of the space that would be occupied in 1990 and 2000. The employment impacts of the Plan are the changes in employment (demand for space) that result in future new construction and changes in use. For the most part, the forecasts reflect general economic conditions that favor continued growth in San Francisco. Most of these are independent of the Downtown Plan policies, although the Plan would have an effect on the amount, type, and location of space that could be provided in the C-3 District and thus on the ability of some businesses to expand there.

The next subsection presents the long-term forecast of employment growth in the C-3 District from 1981 to 2000 under the Downtown Plan./22/ The text focuses on the factors contributing to employment growth for the various types of business activities and highlights how the Plan's effects on C-3 District real estate development potentials would influence decisions to locate or expand in the C-3 District. Following this, the 1990 and 2000 components of the forecast are described separately, in terms of how the Plan would affect employment growth in the C-3 District by these dates. The implications for areas outside the C-3 District, including other City locations and locations elsewhere in the region are described qualitatively. In the last subsection, employment growth is discussed in terms of occupations and wages and salaries, providing an indication of future job opportunities in the C-3 District under the Downtown Plan.

Downtown Plan Forecast

Business activity and employment in the C-3 District would continue to grow under the Downtown Plan. The economic analysis undertaken for this study indicates that there is an underlying strength and attraction in San Francisco's C-3 District as a preferred location for headquarters, business services, retail and hotel activities. Growth in these sectors would be fueled by many of the same factors that have contributed to San Francisco's current position as a principal West Coast headquarters and business service center. The Downtown Plan would not have a major effect on most of these underlying growth factors. The rate of C-3 District growth would slow over time, however, especially as the provisions of the Plan affect the new development that would be built and occupied after 1990.

Table IV.C.12 shows the 1981 to 2000 forecast of C-3 District employment for detailed business activities, both the expected amount of growth and the implied growth rates. Comparison with growth for the past decade (see Table IV.C.6) shows that generally lower rates of growth are forecast for all business activities over the next 20 years. The following discussion highlights the factors from the business and employment analysis that explain the Downtown Plan forecast.

Section IV.B, Land Use and Real Estate Development Impact, describes the effects of the Plan policies on the C-3 District development pattern. Of particular importance to an understanding of the Downtown Plan employment forecasts are the amount, type, cost, and location of space that could be provided in the C-3 District and the implications of these effects of the Plan on rents and the use of existing space. It is important to read both sections to obtain a full description and understanding of future C-3 District growth.

In the next 20 years, the greatest opportunities for economic expansion in the C-3 District will be in the office, tourism, and retail/entertainment sectors. Under the Downtown Plan, all of these activities are forecast to grow, though

C-3 District expansion for some would be more limited than for others. The reasoning behind the forecast conclusions includes the following points:

- Continued expansion of headquarters operations supports growth in the office sector. Headquarters of companies doing business in the Pacific Basin and of electronics and high technology companies will become increasingly more important for downtown San Francisco. The executive and managerial functions of manufacturing, mining, finance, insurance and similar companies will continue to place a high value on a location at the heart of San Francisco's C-3 District. These activities would be willing to pay the increased costs for space in prime C-3 District locations. They consequently show high rates of employment growth over the forecast period. The location decisions of some of the administrative functions in this part of the office sector depend on where information processing activities can be accommodated. Locations outside the C-3 District will become more compatible with this group's space needs, and options within the C-3 District would be limited under the Plan, so C-3 District employment growth for administrative functions is forecast at a slower rate than for the executive functions.

- Expanded business services (lawyers, accountants, advertising, consultants, etc.) also support strong office growth. This is a diverse group of firms, in terms of both size and function. Many value accessibility to other downtown businesses, and the image and ease of communication offered by a central location. Others, particularly smaller firms, are more sensitive to the costs of a downtown location. As it becomes more difficult to find lower cost office space in the C-3 District under the policies of the Plan, some of these activities would choose locations outside the C-3 District. Many business services would continue to locate and expand in the C-3 District, however. This office activity would have the most growth in terms of both absolute amount and growth rate.

- Due to the recent growth in information processing functions, requiring large amounts of space and access to special labor markets, some large firms are evaluating new locations for such office functions. The relatively high costs of a central location are also a factor for firms when leases expire and for others evaluating how much of a premium they are willing to pay. Improved communications technology makes locations at the outer portions of the C-3 District, at more outlying City locations, or outside of San Francisco possible.

  Such reallocations will be likely to occur in the administrative or "back office" functions of the larger companies in the finance, insurance, and manufacturing groups, the utilities, and the larger business service firms as well as smaller service, transportation, and communications firms. The real estate market conditions of the Plan would accelerate this shift. Except for utilities, industry growth exceeds the expected move-outs in all cases so that there is still net growth forecast for these functions in the C-3 District under the Plan.

TABLE IV.C.12: C-3 DISTRICT EMPLOYMENT GROWTH FORECAST FOR THE DOWNTOWN PLAN, 1981-2000

Business Activity	Forecast 2000 Employment	Employment Growth 1981-2000	Growth Rate 1981-2000 (a)
Management/Technical Office	251,590	79,040	2.0%
Manufacturing and Mining	28,300	10,080	2.3%
Finance, Insurance Real Estate	94,260	25,680 (b)	1.7%
Business and Professional Services	81,460	40,810	3.7%
Transportation, Communications, Utilities	34,300	5,560 (c)	0.9%
Government Office	13,270	-3,090	-1.1%
Trade/Customer Service Office	51,880	17,110	2.1%
Wholesale and Manufacturing Sales	22,890	9,650	2.9%
Retail Services	21,670	5,370	1.5%
Branch Banks	7,320	2,090	1.8%
Retail Trade	27,820	5,630	1.2% (d)
Hotels	19,920	6,620	2.2%
Cultural/Institutional/Educational	9,290	1,160	0.7%
Industrial/Warehouse/Automotive/Parking	4,390	-2,540	-2.4%
Building Maintenance/Security	7,230	2,030	1.8%
TOTAL (e)	372,120	109,050	1.84%

TABLE IV.C.12: C-3 DISTRICT EMPLOYMENT GROWTH FORECAST FOR THE DOWNTOWN PLAN (Continued)

(a) Annual compound growth rate.

(b) FIRE forecast includes growth of 14,840 jobs in executive/managerial functions and 10,850 jobs in information processing/administrative functions. The lower growth in the latter category reflects the assumption that some in this group move out of the C-3 District over time and that, in the future, more of the growth of these functions will occur in non-central locations.

(c) TCU forecast includes decline of employment in utilities and growth of jobs in non-utility transportation and communication firms.

(d) Retail sales are forecast to increase at a rate of 2.22% per year, higher growth than retail employment.

(e) The forecast does not include construction jobs. These were estimated based on the amount of construction activity (new construction, conversion, and ongoing maintenance) according to the forecast of real estate development under the Plan. Construction jobs are expressed as annual averages, and are not comparable to the permanent employment estimates shown here. See Table H.11 in the Supplemental Tables to Appendix H.

SOURCE: Recht Hausrath & Associates

- Increasing business among Pacific Basin countries supports growth of office activity in San Francisco because of its central location, desirability, and role as one of the major business centers on the West Coast. The positive influence of this factor is incorporated into the forecasts for office activities of manufacturing, wholesale, transportation, communications, and business service activities. There are some more cost-conscious firms in this group which would find C-3 District space too expensive under the Downtown Plan policies. Many of these would be likely to find alternative locations in the City.

- The wholesale activities of manufacturers' representatives and the merchandise/apparel marts are expected to remain strong in the C-3 District, particularly those associated with downtown retailing.

- The public sector is unlikely to grow significantly, at least in the 1980's, as local, state, and federal governments cut back and shift priorities. Government office activities located in leased space in the C-3 District would decline as leases expire and agencies seek lower-cost space outside of the study area.

- Growth of tourism is forecast after recovery from the slower period of the early 1980's. Convention visitors are expected to increase in importance. Tourism supports the growth of overnight accommodations and restaurant and retail establishments. Office activity downtown contributes to the component of hotel and retail development supported by business travel. The Plan would reinforce the attractions of downtown San Francisco as a tourist and convention destination.

- Downtown retail growth is supported by tourist spending, spending by downtown workers and spending downtown by residents of the City and region. The Plan would enhance the status of downtown San Francisco as a prime retailing location. Retail trade (stores and restaurants) is forecast to grow in the C-3 District and sales are expected to increase at a greater rate than employment or space./23/

- Lower overall growth is expected for downtown retail services, compared to other sectors, due partially to the availability and cost of C-3 District space under the policies of the Plan. C-3 District growth in some firms in this sector is dependent on growth in the office activities they serve. Growth trends are strongest for those activities in the fashion industry and for those depending on high pedestrian traffic and tourist trade. Others that are more sensitive to cost, i.e. medical/dental and delivery/messenger services, would consolidate downtown activities or disperse to more peripheral locations under the Plan.

- Only limited overall growth is expected for the group of cultural, entertainment, educational, non-profit, and institutional uses in the C-3 District. Entertainment and educational activities are expected to grow somewhat. As the policies of the Plan would reduce the availability of lower-cost space in the C-3 District, other activities in this group would consolidate or relocate outside the C-3 District.

- The primary factors responsible for the decline in manufacturing and distribution activities in industrial space in San Francisco are unlikely to change, regardless of C-3 District policies. Certain of these activities desire a San Francisco location, including those which value proximity to the office sector or to the City's labor force. As the area of office activity in the C-3 District expands, other industrial space users will seek sites outside the C-3 District that are more suitable to their needs. The small share of these activities which remain in the C-3 District will find their costs increasing and shift to more peripheral locations.

In the course of the economic analysis, consideration was given to the effect on C-3 activity of possible future development further south of Market Street outside the C-3 District, including Mission Bay. It was reasoned that most of the business activities forecast to grow in the C-3 District prefer this central area over a more peripheral City location. This is particularly true of those that value a location in Subareas 1, 6, and 2 (see Figure II.1) nearer Market Street. It was assumed that, during most of the time period under consideration in this EIR, Mission Bay would not be developed to the extent that it could have a major effect on C-3 District activity. This assumption depends on the timing and type of space eventually developed there. Some options could be more competitive with the C-3 District, while other options could be more competitive with potential development immediately south of the C-3 District. As of the date of this writing, Southern Pacific (the developer of Mission Bay) has taken no further action on planning activities for this project since spring, 1983. Because planning and approvals would take two years or more and completion of the first buildings would occur three to five years after that, it is expected that any development in Mission Bay would first be available for occupancy in the early or mid-1990's.

The economic forecasts considered other important factors affecting C-3 business activity and employment, including labor supply and housing. Economic growth requires expansion of the region's housing supply. In the 1970's, the passing of the baby boom generation into the labor force and the increase in the number of working women provided the majority of new workers. In the 1980's and 1990's, job growth will require more in-migration to supply the required labor. New worker households require housing growth.

The employment forecasts assume that a large potential for housing expansion exists at the periphery of the Bay Area region where more time, costs, and difficulties are involved in traveling to and from jobs in San Francisco. This factor provides an incentive for businesses to locate at more outlying locations and is one of the reasons behind the expected expansion of some functions in suburban locations.

The employment forecasts also recognize the increasing acceptance of higher density, central city living and assume that infill residential development at locations closer to City jobs will offset some of the above effect. The types of workers employed in downtown San Francisco (higher proportions of younger people, single individuals, households without children, minority group members) may prefer, or of necessity choose, higher density housing arrangements. The housing sections of the EIR consider the residence patterns of downtown workers in detail.

Consideration was also given to the ability of transportation systems to handle increased numbers of commuters. The economic forecasts considered the time/cost factors of travel as described above. They did not assume, however, that the physical capacities of the transportation systems would constrain C-3 District employment growth. In other words, while increased travel times and shifts in mode are assumed, at least to some extent, absolute limits on the capacities of the systems were not assumed. The transportation and housing sections of the EIR consider transportation impacts of future employment growth and the types of adaptations in residence and travel patterns which are likely to occur.

1990 C-3 District Employment

Employment in the C-3 District in 1990 is forecast to be 322,500 jobs. Table IV.C.13 shows the forecast distribution of employment by business activity and subarea. From 1984 to 1990 total employment growth would be 41,600 jobs, or about a 15 percent change. This represents an annual compound growth rate of 2.33 percent. A decline is forecast for C-3 employment in industrial/warehouse/automotive and parking activities. There would be employment growth, however, in all other business activity groups. The largest amount of job growth would be in the office sector, while the highest percentage increase would be in hotel employment. Table IV.C.16 summarizes the forecasts changes in employment for each business activity for this period as well as for the earlier (1981-1984) and later (1990-2000) periods.

The employment forecast for each business activity was converted into demand for space as part of the "matching" process used to estimate future employment and development patterns in the C-3 District./24/ This analysis indicates that the space in projects already approved for construction and planned for Yerba Buena Center (YBC) would absorb the majority of the employment growth forecast to 1990. Therefore, the Plan would only begin to have a measurable effect on C-3 District economic activities and employment in the late 1980's, as projects approved under the conditions of the Plan would become available for occupancy. Section IV.B describes the assumptions about 1984 to 1990 C-3 District development in detail.

The distribution of employment growth by subarea would reflect the development pattern of the 1984 to 1990 projects. The completion of YBC would result in increases in activity in south of Market areas. Following recent development patterns, most of the increase in employment would continue to occur in Subarea 1, north and immediately south of Market Street.

In addition to C-3 District permanent employment, construction employment is estimated to average 5,370 jobs per year over the 1984 to 1990 period./25/

2000 C-3 District Employment

By the year 2000, the Downtown Plan would have an effect on economic activities and employment in the C-3 District. The Plan would affect the amount of employment growth in the C-3 District, the location of the growth, and the types of business activities that would continue to locate and expand in the downtown area.

The following discussion of the business and employment impacts of the Downtown Plan describes the effects of the Plan over time. Both permanent employment and construction employment would be affected by the Downtown Plan. Tables which summarize the employment forecasts under the Plan are presented on the next several pages and are referred to in the text which follows. The supplemental tables at the end of Appendix H include a complete set of employment forecast tables, including totals and changes by business activity or subarea (see Tables H.5-H.11).

In reviewing these tables and the text, the reader should keep four points in mind. First, C-3 District growth in one or two decades would be small relative to the amount of employment already located in the C-3 District. Thus, the Plan has less effect on total employment in 2000 than on the changes in employment 1990 to 2000. Second, the major types of economic activities in

TABLE IV.C.13: C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY AND SUBAREA FOR THE DOWNTOWN PLAN, 1990

Business Activity	Subareas 1	2	3	4	5	6	7	Total C-3 District	Percent of Employment
Office (a)	167,040	21,320	8,190	13,950	12,770	31,120	5,010	259,400	80.4%
Retail Trade	7,020	560	1,210	890	3,430	7,910	4,350	25,370	7.9%
Hotel	2,600	--	390	70	9,710	3,450	100	16,320	5.1%
Cultural/Institutional/Educational	1,580	160	1,430	320	3,620	660	1,520	9,290	2.9%
Industrial/Warehouse/Automotive/Parking	360	920	2,630	180	1,140	340	70	5,640	1.7%
Total Employment Allocated To Subareas	178,600	22,960	13,850	15,410	30,670	43,480	11,050	316,020	
Percent of Employment	56.5%	7.3%	4.4%	4.9%	9.7%	13.7%	3.5%	100%	
Building Maintenance	--	--	--	--	--	--	--	6,510	2.0%
TOTAL (b)								322,530	100.0%

(a) Includes both management/technical office and trade/customer service office.

(b) Does not include construction employment, expected to average 5,370 jobs per year over the 1984 to 1990 period. See Table H.11 at the end of Appendix H.

SOURCE: Recht Hausrath & Associates

TABLE IV.C.14: C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY AND SUBAREA FOR THE DOWNTOWN PLAN, 2000

Business Activity	Subareas 1	2	3	4	5	6	7	Total C-3 District	Percent of Employment
Office (a)	189,400	30,540	10,990	16,470	16,910	33,610	5,550	303,470	81.5%
Retail Trade	7,230	1,100	1,500	980	3,870	8,790	4,350	27,820	7.5%
Hotel	2,890	280	680	70	10,860	5,040	100	19,920	5.4%
Cultural/Institutional/Educational	1,490	240	1,430	320	3,620	670	1,520	9,290	2.5%
Industrial/Warehouse/Automotive/Parking	340	630	2,280	100	700	310	30	4,390	1.2%
Total Employment Allocated To Subareas	201,350	32,790	16,880	17,940	35,960	48,420	11,550	364,890	
Percent of Employment	55.2%	9.0%	4.6%	4.9%	9.8%	13.3%	3.2%	100%	
Building Maintenance	--	--	--	--	--	--	--	7,230	1.9%
TOTAL (b)								372,120	100%

(a) Includes both management/technical office and trade/customer service office.

(b) Does not include construction employment, expected to average 4,300 jobs per year over the 1990 to 2000 period. See Table H.11 at the end of Appendix H.

SOURCE: Recht Hausrath & Associates

TABLE IV.C.15: C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY FOR THE DOWNTOWN PLAN, 1981, 1984, 1990 AND 2000

	Setting		Downtown Plan	
Business Activity	1981	1984	1990	2000
Management/Technical Office	172,550	185,870	216,220	251,590
Trade/Customer Service Office	34,770	37,350	43,180	51,880
Retail Trade	22,190	23,200	25,370	27,820
Hotel	13,300	13,820	16,320	19,920
Cultural/Institutional/ Educational	8,130	8,340	9,290	9,290
Industrial/Warehouse/ Automotive/Parking	6,930	6,500	5,640	4,390
Building Maintenance	5,200	5,780	6,510	7,230
TOTAL	263,070	280,860	322,530	372,120

NOTE: See Table H.11 in the Supplemental Tables to Appendix H for construction employment estimates.

SOURCE: Recht Hausrath & Associates

TABLE IV.C.16: CHANGES IN C-3 DISTRICT EMPLOYMENT BY BUSINESS ACTIVITY FOR THE DOWNTOWN PLAN, 1981-2000

Business Activity	Change 1981-1984		Change 1984-1990		Change 1990-2000		Change 1984-2000	
	No.	% Change	No.	% Change	No.	% Change	No.	% Change
Management/Technical Office	13,320	7.7%	30,350	16.3%	35,370	16.4%	65,720	35.4%
Trade/Customer Service Office	2,580	7.4%	5,830	15.6%	8,700	20.1%	14,530	38.9%
Retail Trade	1,010	4.6%	2,170	9.4%	2,450	9.7%	4,620	19.9%
Hotel	520	3.9%	2,500	18.1%	3,600	22.1%	6,100	44.1%
Cultural/Institutional/ Educational	210	2.6%	950	11.4%	--	--	950	11.4%
Industrial/Warehouse/ Automotive/Parking	(430)	-6.2%	(860)	-13.2%	(1,250)	-22.2%	(2,110)	-32.5%
Building Maintenance/ Security	580	11.2%	730	12.6%	720	11.1%	1,450	25.1%
TOTAL	17,790	6.8%	41,670	14.8%	49,590	15.4%	91,260	29.9%

NOTE: See Table H.11 in the Supplemental Tables to Appendix H for construction employment estimates.

SOURCE: Recht Hausrath & Associates

the C-3 District would not change much over time as a result of the policies of the Downtown Plan. The office sector is such a large proportion of total C-3 District employment (about 80 percent in 1981) and most of the growth is forecast to occur in office activities, so that the C-3 District remains predominantly an office center. Third, the Plan would have different effects on individual business activities. Generally those most affected would be the ones most sensitive to the cost of space and those which place less value on a central C-3 District location. Fourth, compared to the forecasts of the development of space described in the previous section (IV.B), the employment forecasts indicate that the Plan would have less effect on employment than on space. This is primarily because businesses would take steps to use existing space more efficiently when faced with higher rents (and less new development).

As shown in Tables IV.C.14 and IV.C.15, total C-3 District employment in 2000 is forecast to be 372,000 under the Downtown Plan. There would be an increase of about 49,600 jobs over the 1990 total (a 15 percent increase). Adding this net change to the growth forecast for the prior period (1984 to 1990), results in a total increase of about 91,200 jobs in the C-3 District between 1984 and 2000, a 30 percent increase (see Table IV.C.16). The annual compound growth rate during the latter part of the forecast period (1990-2000) is 1.44 percent. Compared to the 2.33 percent growth rate for the 1984-1990 period, the lower growth rate reflects both the assumption that growth rates would not be maintained indefinitely regardless of C-3 District policies, and slower C-3 District growth as the effects of policies of the Plan on C-3 District development potentials influence future location decisions.

The office sector would continue to dominate business expansion in the C-3 District. Table H.4 in the Supplemental Tables to Appendix H shows detailed office employment forecasts for the Plan, highlighting the differences between certain functions. The table also includes comments on the locational preferences of the different business activities as an indication of their sensitivity to the implications of C-3 District policies for the supply of space in the district.

From 1990 to 2000, about 70 percent of the total employment growth would be in management/technical office activities. These are the business activities with the highest preferences for the central C-3 District location. There are some functions within these activities that are more cost-sensitive. Lower rates of growth for the back-office functions of larger companies already located in the C-3 District and smaller business service companies are the result of the higher C-3 District space costs brought about by increased competition for space under the Plan.

The smaller group of trade/customer service office activities would have less absolute employment growth, but a strong relative change (20 percent) over this period. Growth rates would be highest for those activities with strong preferences for the central location, such as businesses that serve West Coast or Pacific Basin markets. Smaller wholesaling and retail service companies would be less likely to find their space needs satisfied in the C-3 District under the Downtown Plan.

Over all employment groups, the highest percentage increase in employment would be in the hotel sector as the attractiveness of locations for hotel development around a completed Yerba Buena Center increase and, in addition, some hotel development accompanies office expansion in both the traditional office core and the future highrise center south of Market Street. Hotel employment in the C-3 District would also increase due to the upgrading of existing hotel facilities. The pressures for this type of change would be strong under the Plan because the size of new hotels in the prime area around Union Square would be regulated.

Employment in retail trade would show moderate growth over this period, compared to the other sectors. There would be stronger growth in C-3 District retail sales during this period (a 21 percent real increase in sales, compared to a 10 percent increase in employment). A consequence of the Plan would be an increase in the retail spending potential downtown without the ability to add a proportional amount of new retail space. Therefore, more intensive use of both existing and new space would result./26/

There would be no growth and some loss of C-3 District employment in those sectors not prepared to compete for the central location. Some cultural/institutional and educational activities would move to less-preferred and thus lower cost space in the outlying subareas of the C-3 District. The decline of industrial/warehouse/automotive and parking jobs in the C-3 District would continue as in the recent past, as the space once occupied by these activities becomes more valuable for new development or conversion./27/

The strong demand for C-3 District office space under the Downtown Plan would result in more intensive use of existing space than was the case in 1981, when average densities for occupied office space (gross sq. ft. per employee) were 265 sq. ft./28/ This would occur as businesses faced with higher rents take actions to use space more efficiently. By 2000, it is estimated that employment densities for each of the individual business activities in office space would have increased five percent over the 1981 densities./29/ This adaptation accommodates more employment in a given amount of space.

Combining this change with changes in the mix of office activities downtown (each with different densities) results in a four percent increase in the overall average office employment density by 2000 (from 265 gross sq. ft. per employee to 255 gross sq. ft. per employee)./30/ The changes in density and in the mix of business activities locating in the C-3 District are the primary reasons why the Downtown Plan would have less effect on employment growth than on space built in the C-3 District.

C-3 District employment growth would generally follow the locational pattern described for C-3 District development under the Plan in Section IV.B. Subarea 1 would continue with over half of total C-3 District employment in 2000 (see Table IV.C.14.) The largest difference in the location of C-3 District employment would be in Subarea 2. Although the percentage of total employment in this subarea would only increase to nine percent in 2000 from seven percent in 1990 (see Tables IV.C.14 and IV.C.13), the largest relative change would occur here, compared to other subareas. Following this pattern, the percentage of total employment in Subareas 6 and 7 would decrease somewhat. The proportions of the total in Subareas 3, 4, and 5 would remain relatively constant.

The overall pattern of employment in 2000 is not as different as might be expected from the location of new development projects, because of the relatively large amount of employment growth that would be accommodated in existing space through increased employment densities. The locations of this type of employment growth reflect the historic C-3 District development pattern.

Development in the C-3 District under the Downtown Plan would generate construction employment over the 10 year period. On average, there would be about 4,300 construction jobs each year. This forecast includes employment in new construction, conversions, ongoing repair and upgrading work, and in project management.

Beyond 2000, C-3 District Business and Employment

Employment growth would continue in the C-3 District beyond the year 2000; the effects of the Downtown Plan, in terms of land use and the characteristics of the businesses located downtown, would become more evident. Employment growth beyond 2000 could be affected more than in the earlier time period. Employment growth rates could become slower, if the more intensive use of existing space (higher employment densities in response to increased rents) did not continue in the same degree and annual rates of office construction did not increase. In this case, the Plan's effects on employment would become more similar to its effects on space, beyond 2000. On the other hand, higher annual office construction in the C-3 District than forecast for the 1990-2000 period could occur for a period of time beyond 2000, as development becomes more feasible in the locations to which the Plan seeks to redirect growth. If so, rates of employment growth more similar to those in the earlier period could be maintained in the C-3 District. (Also see Section IV.B, Land Use and Real Estate Development Impact.)

City And Region

Citywide Employment Impacts

Citywide employment is forecast to increase between 1981 and 2000 under the policies of the Downtown Plan. Just over half of this growth would occur in the C-3 District. The balance is likely to be divided about equally between the areas surrounding the C-3 District (south to China Basin including Mission Bay, Civic Center, Northern Waterfront and the Washington/Broadway Special Use District) and the rest of the City./31/ Depending on City policies governing future development in these areas, the average growth rate for total City employment could be about 1.5 percent per year. As indicated by the following discussion of impacts outside the C-3 District, the growth rate in areas near the C-3 District would be higher than the average. The rate would be lowest in the rest of the City./32/

Future changes in employment and business activity in City locations outside the C-3 District will be influenced by general economic factors, the City's land use policies for those areas, and real estate market conditions. The Downtown Plan would have an effect on real estate market conditions in other City areas, to the extent that existing or potential C-3 District business activities could locate elsewhere in the City and decide to do so because of the policies of the Plan. Section IV.B, Land Use and Real Estate Development Impact, identifies the possible impacts of the Plan in other City locations from the perspective of overall development patterns and how land uses might change due to shifts in activity and development outside the C-3 District. This subsection focuses on the types of activities that would shift from the C-3 District, the types of activities in other City areas that would be affected by this shift and the implications of these changes for City employment and job opportunities in San Francisco.

The most direct impacts of the Downtown Plan would be on new office construction in the C-3 District. Therefore, the citywide employment impacts of the Plan would primarily be the result of shifts of office activity and related uses. The office functions most sensitive to the costs of space would be those most likely to look for locations outside the C-3 District under the conditions of the Plan. These include the back-office, information-processing functions of larger companies already based in the C-3 District, as well as smaller office firms to whom the image and accessibility of the central office area is not of primary importance. Business and retail services and other downtown support activities that are closely tied to clients that remain in the C-3 District would be less likely to shift from the area. On the other hand, some support functions, including retail trade, would follow substantial amounts of office development that shifted outside the C-3 District.

Potential shifts of smaller firms and back-office, information processing functions which employ large numbers of middle and lower-level personnel raise issues of retaining these activities in San Francisco because of the business activity and job opportunities they provide. Economic analysis indicates that firms of these types would consider other San Francisco locations, particularly those to the south of the C-3 District, as well as locations in other regional areas. To the extent that shifts in business activity occur within the City because of the Plan, there would be higher rates of employment growth in areas surrounding the C-3 District. These shifts would somewhat offset the slower growth forecast for the C-3 District so that citywide economic activity would be less affected by the policies of the Plan.

Preliminary forecasts indicate the potential for relatively high rates of employment growth in the areas surrounding the C-3 District, particularly in the areas south of Market Street. Because of the relatively small amount of employment currently in these areas (about 12 percent of citywide employment in 1981), increased employment growth could represent a large percentage increase in these areas (perhaps around 60 percent from 1981 to 2000). Thus, by 2000, the share of citywide employment in these areas near the C-3 District could increase to about 15 percent, reflecting a considerable (25 percent) increase in the proportion of citywide business activity located there.

This potential pattern depends on future policies for development in these areas. The estimates assume that shifts in activity would be allowed and encouraged, particularly to the south of the C-3 District. If this is not the case, then there would be less growth outside the C-3 District and less total employment growth for the City. Under a lower citywide growth scenario, there would be less growth of job opportunities and, potentially, less mix and diversity of the types of office jobs provided.

Shifts of office activities into areas surrounding the C-3 District, particularly into those to the south, raise other issues of business and job opportunities. As office activities move south, the activities they replace would typically be the industrial, warehouse, and distribution businesses occupying older industrial and warehouse space. While a long-term trend of decline for many of these activities has been underway for some time, the shifts in activity because of Downtown Plan policies could intensify transitional pressures and increase the extent of shifts in activity. Some of the existing business activities coming under this additional pressure could, in turn, shift to still more peripheral San Francisco locations. Others could relocate outside of San Francisco and some of the more marginal operations could go out of business. Additional discussion of potential effects of these types is provided in Section IV.C, Land Use and Real Estate Development Impact and in Sections V.B and V.C, Mitigation.

Shifts of industrial, warehouse, and distribution businesses could affect total job opportunities in San Francisco and the types of jobs available. In terms of the number of jobs, efforts to retain these uses in other locations in the City would result in the largest total employment. However, because of the relatively low densities of employment, shifts of activities of these types outside of San Francisco may not have a large effect of total citywide employment. Nevertheless, issues related to the diversity of City employment could be more important. In many cases, these more traditionally blue-collar jobs provide different types of employment opportunities, compared to the opportunities in other business sectors. Thus, concerns are raised of finding new locations for these activities over the long term, to the extent that certain of them will be able to remain in business in San Francisco locations.

Regional Employment Impacts

A large amount of employment growth is expected in the Bay Area region between 1981 and 2000. San Francisco is likely to represent a constant or slightly declining share of total regional employment over time. Therefore, the policies of the Downtown Plan would not have a measurable effect on employment growth in the region. Most of the regional growth, especially in high technology engineering and manufacturing, related service sectors and retail trade, is independent of development policies in the central city of the metropolitan area. To a small extent, some activities which would otherwise have located in the C-3 District could locate outside the region under the Downtown Plan. If this occurred, total regional employment would be slightly lower. Changes in San Francisco employment are more likely to be evident in the distribution of employment and business activities within the region.

Depending on other City policies, however, most of the growth that would occur in the C-3 District could be accommodated elsewhere in the City. Only a relatively small amount would shift to locations elsewhere in the region. Therefore, implications that regional employment could be more decentralized because of the Downtown Plan would depend, to a greater degree, on land use policy decisions for other City locations, particularly south of the C-3 District, including Mission Bay.

In any case, there would be little effect on regional employment growth. Section IV.B describes regional real estate market conditions and how little they are likely to be changed by the Downtown Plan.

C-3 District Job Opportunities And Labor Needs

Permanent Employment

Information about future occupations and wages and salaries for C-3 District jobs describes how job opportunities downtown are likely to change over time. Table IV.C.17 summarizes future C-3 District employment by occupation, and Table IV.C.18 identifies the future mix of jobs by wage and salary categories./33/ The tables also show the amount of growth between 1984 and 2000 period for each occupation and wage and salary category.

TABLE IV.C.17: C-3 DISTRICT EMPLOYMENT BY OCCUPATION FOR THE DOWNTOWN PLAN, 1984, 1990 AND 2000 (a)

	Total Employment			Employment Growth					
	1984	1990	2000	1984-1990			1990-2000		
Occupation				No.	% Of Total Change	% Change	No.	% Of Total Change	% Change
Professional/Technical	69,720	82,840	97,510	13,120	31.5	18.8	14,670	29.6	17.7
Managerial/Administrative	54,510	62,880	73,320	8,370	20.1	15.4	10,440	21.1	16.6
Clerical	82,490	94,930	109,370	12,440	29.8	15.1	14,440	29.1	15.2
Sales	19,000	20,740	22,980	1,740	4.2	9.2	2,240	4.5	10.8
Service	27,760	31,040	35,130	3,280	7.9	11.8	4,090	8.2	13.2
Crafts, Operative and Other	27,380	30,100	33,810	2,720	6.5	9.9	3,710	7.5	12.3
TOTAL	280,860	322,530	372,120	41,670	100.0	14.8	49,590	100.0	15.4

NOTE: These forecasts were developed by applying the 1981 distribution of occupations for 18 individual business activity groups (from the Downtown EIR Employer Survey) to the employment forecasts for each group. Thus, the changes in occupations shown above arise from a changing mix of C-3 District business activities. While it is also possible that the distribution of occupations within a business activity could change over time, data are not available for evaluating these changes. See Appendix H for more detailed discussion.

(a) Includes permanent C-3 District employment and excludes construction labor.

SOURCE: Recht Hausrath & Associates

TABLE IV.C.18: C-3 DISTRICT EMPLOYMENT BY WAGE AND SALARY CATEGORY FOR THE DOWNTOWN PLAN, 1984, 1990 AND 2000 (a)

	Total Employment			Employment Growth					
				1984-1990			1990-2000		
Wages and Salaries (b)	1984	1990	2000	No.	% Of Total Change	% Change	No.	% Of Total Change	% Change
Less than $12,000	31,720	35,790	40,170	4,070	9.8	12.8	4,380	8.8	12.2
$12-14,999	55,260	61,530	68,830	6,270	15.0	11.4	7,300	14.7	11.9
$15-24,999	95,020	109,220	126,000	14,200	34.1	14.9	16,780	33.9	15.4
$25-49,999	72,800	85,280	100,400	12,480	29.9	17.1	15,120	30.5	17.7
$50-74,999	15,060	18,270	22,300	3,210	7.7	21.3	4,030	8.1	22.1
$75,000 and Above	11,000	12,440	14,420	1,440	3.5	13.1	1,980	4.0	15.9
TOTAL	280,860	322,530	372,120	41,670	100.0	14.8	49,590	100.0	15.4

NOTE: These forecasts were developed by applying the 1981 distribution of jobs among wage and salary categories for 18 business activity groups (from the Downtown EIR Employer Survey) to the employment forecasts for each group. The changes shown above arise from a changing mix of C-3 District business activities. While it is possible that the distribution of wages and salaries within a business activity could change over time, data are not available for evaluating these changes. See Appendix H for more detailed discussion.

(a) Includes permanent C-3 District employment and excludes construction labor.
(b) Constant 1982 Dollars.

SOURCE: Recht Hausrath & Associates

Over time (1984 to 1990 and 1990 to 2000), C-3 District employment is forecast to increase in all occupations and in all wage and salary categories. Jobs in the professional/technical, managerial, and clerical occupations show the largest increase and would increase as a percentage of total employment. This is because office activities which are the largest employers of these occupations show the most job growth of all downtown business activities.

There would be growth of employment for crafts and operatives even though industrial activities decline in the C-3 District. Most of the job growth in these occupations is due to growth in the office sector. Increases in sales and service jobs are largely attributable to retail and hotel employment growth.

Among the wage and salary categories, jobs paying above $25,000 (in 1982 constant dollars) would increase as a share of C-3 District employment. The largest increase in numbers of jobs would be in the $15,000 - $24,999 group, while the largest percentage increases would be in the $25,000 - $49,999 and the $50,000 - $74,999 categories.

From 1984 to 1990, entry level jobs paying under $15,000 would increase by 10,340. This growth would represent one-quarter of total C-3 District job growth over the period. Seventy-three percent of these jobs would be in the office sector. The rest would be in retail and hotel activities. From 1990 to 2000, jobs paying under $15,000 would increase by 11,680, accounting for 24 percent of C-3 District job growth. The majority of the increase in these jobs (63 percent) would continue to be in the office sector. (Lower wages are used in this discussion as a proxy for entry-level positions which do not require extensive skills, training, or experience.)

Jobs paying $50,000 or more are those requiring the most education and experience. These would represent about 12 percent of C-3 District job growth between 1990 and 2000. This would leave the largest portion of job growth, about 64 percent, in the $15,000 - $24,999 and $25,000 - $49,999 categories, with the most growth occurring in the lower of the two wage/salary categories.

Construction Employment

Development under the Downtown Plan would result in an average of about 4,500 construction crafts jobs per year during the 1984 to 1990 period, and an average of about 3,600 crafts jobs per year between 1990 and 2000. Crafts occupations would account for about 84 percent of the total annual construction related employment. The balance would be in managerial and clerical occupations for project management functions. Because of the skills and experience required for most construction crafts jobs, most of the annual wages and salaries would be in the $25,000 - $49,999 range.

NOTES - Business and Employment

/1/ The employment categories for the C-3 District are different from those which are often included in studies of this type. In place of the broad standard industrial classifications of employment (recorded in published statistics) which combine diverse mixes of business functions, this analysis defines employment categories by both the functions of business establishments and the types of space (land use categories) in which they are located. The resultant employment estimates can be used to describe the number and types of jobs in various business activities which occupy different types of space. This approach is particularly important for the purposes of this EIR. Since the policies of the Downtown Plan directly affect land use and real estate development, the implications of those effects on employment can be described because of the way the space and employment categories have been defined.

/2/ Office activities have been grouped into two categories based on differences in business functions. The functional distinctions reflect differences in business operations, in space needs and locational preferences, and in workforce characteristics. These differences are important to the impact assessments in this EIR. Both categories are called office activities because their business operations are located in the space classified as office in the Land Use Inventory.

To describe both C-3 District office employment and office space, the employment totals for both categories of office activities in the tables in the Business and Employment sections (such as in Table IV.C.1) are comparable to the space figures in the single office space category in the tables in the Land Use and Real Estate Development sections (such as in Table IV.B.1).

NOTES - Business and Employment (Continued)

The two categories of office activity and employment used in this EIR are the same as those in the Downtown EIR Consultant's Report except that the names of each grouping have been changed. The category of management/technical office was referred to as primary office in the earlier report. The category of trade/customer service office was previously referred to as secondary office activity.

/3/ This category of trade/customer service office includes some activities which are not always classified as office. They are defined as office activities in this EIR because they are located in the space classified as office in the Land Use Inventory. Only branch bank space was separately identified in that Inventory. Branch banks are grouped with other customer service offices because they exhibit similar characteristics.

/4/ These estimates are only approximate. They were derived from the Downtown EIR Employer Survey and the retail analysis, done as a part of the employment forecasting effort, as described in Appendix H.

/5/ As explained in Table IV.C.1, the C-3 District employment estimates for all categories except building maintenance and construction were developed based on the Downtown EIR Employer Survey and Land Use Inventory. The survey-based estimates, however, did not include workers whose base of operation is outside the C-3 District and others not covered by the survey sampling procedures (described in Appendix F). Estimates of building maintenance and construction jobs were developed separately. The methodology for all estimates is explained in Appendix H.

/6/ Since employment statistics are not available for San Francisco's downtown area, survey work and analysis were done as a part of this EIR to identify and describe downtown jobs and workers. This provides a description of what currently exists and a basis for forecasting future conditions, including the 1984 setting. Much of the description of the setting is for 1981/82 rather than 1984 so as to report the findings of the analysis separate from the expectations of future conditions. Further, some of the detailed characteristics are only available for the situation at the time that the surveys and analyses were conducted.

/7/ The estimated, average employment densities are expressed as actual gross square feet of occupied building space per employee. Vacant, unoccupied space (measured in actual gross square feet) is not included in these figures. In other words, the employment densities shown in Table IV.C.2 could be applied to total space estimates (such as those in Table IV.B.1) if there is no vacant space. If there is vacancy, the employment density factors would be applied to that portion of the total space that is occupied (such as to 97 percent of the total space if three percent was vacant). The employment densities were developed to exclude vacant space primarily because vacancy rates change over time.

NOTES - Business and Employment (Continued)

Vacant space can be included in the employment density ratios. For example, the employment density for management/technical office activities of 276 sq. ft. per employee would be 285 sq. ft. per employee if three percent of total office space in this category was vacant or 290 sq. ft. per employee if five percent was vacant.

/8/ Different vacancy rates could also affect the distribution of employment. They were not a major factor in the 1981 estimates, however.

/9/ It should be noted that the wage and salary distributions shown here are from the Downtown EIR Employer Survey and represent wages and salaries paid for jobs. In the case of part-time jobs, it is possible that one employee could hold more than one job. If so, the total salary received by employees holding more than one job would be understated by the estimates. With job sharing, it is also possible that one full-time job could be held by two workers. If so, the wages received by the workers sharing one job would be overstated.

The wages and salaries shown here do not represent household incomes which are considered later in this section and in Section IV.D, Residence Patterns and Housing. The distribution of household incomes for downtown workers would differ from the distribution of wages and salaries shown here if there is more than one worker per household, if the worker holds more than one job, or if the household receives income from other sources (tips, pensions, savings, investments, etc.).

/10/ It is possible that the large share of operatives in trade/customer service office jobs overstates the actual figure, since the sample of firms in this group is not large given the wide variety of businesses that are included here. However, it is useful in indicating the relatively large share of jobs of this type.

/11/ More detailed information on residence patterns and employee demographic characteristics by county of residence is included in Section IV.D, Residence Patterns and Housing.

/12/ It can be noted that the averages of the responses to the job tenure questions are higher than the median responses, indicating the effect of respondents with very long tenures. The median responses (middle of the distribution) are as follows: work downtown, 5 years; work at present employer, 3 years; work at present work address, 2 years.

/13/ The survey responses indicate the number of years that respondents had worked in the C-3 District (or for their current employer or at their present work address) when interviewed. These responses do not indicate the total length of time that workers will be employed in the C-3 District since most of those interviewed will continue to work downtown beyond the date of the survey. On the average, the responses should represent one-half of the total length of time that respondents will work in the C-3

NOTES - Business and Employment (Continued)

District. In other words, there was an equal probability of interviewing those in the early years of their tenure downtown, those near the end of their tenure, and those near the middle of their time working downtown. Thus, the responses should be doubled to represent the average total number of years.

/14/ In addition to the average and median responses to the job tenure questions, the distribution of responses was also tabulated. The distributions indicate the percentages of all C-3 District employees who had worked in the C-3 District (or for their current employer or at their present work address) for one year or less. If it is assumed that 1981-82 was typical, these distributions identify the turnover that occurs each year. The distributions of the responses indicate the following percentages of employees who responded one year or less to questions about: work downtown, 19.7 percent; work at present employer, 26.6 percent; work at present work address, 36.3 percent.

/15/ It should be noted that the responses in Table IV.C.9 are percentages of workers in households with various characteristics. The percentages do not necessarily represent households since more than one worker per household could have been interviewed. As discussed in the housing section, on the average, there is more than one C-3 District worker in households with downtown workers.

/16/ For the total C-3 District workforce, it appears that many of those respondents under age 25 reside at home with one or more parents. Thus, responses to the question about household type indicating households with children could have been made by the child as well as the parent. The number of children per household probably does not include workers, however, since children were defined as under 18 years of age.

/17/ The difference between persons-per-household and children-plus-working adults-per-household provides an indication of non-working adults per household. Overall, this figure is 0.3 non-working adults per household. There appear to be more non-working adults in households with workers employed in office activities than in the other business activities. This is probably influenced by income and also results from the mix of household types in each group.

It should be noted that the responses describing workers per household in Table IV.C.9 count all workers in C-3 District employee households, including those who work in the C-3 District and those who are employed elsewhere. There is a difference between all workers in downtown employee households (shown in Table IV.C.9) and C-3 District workers in downtown employee households. The latter estimates are presented in Table IV.D.3, tabulated for employee households by county of residence. There is also a difference between each of these estimates and the figures from the U.S. Census tabulations which identify all workers in

NOTES - Business and Employment (Continued)

all households (not just households with downtown workers) in San Francisco and in other communities (discussed in Appendix I). To avoid confusion, attention should be given to the distinctions between these figures. Each is useful, depending upon the purposes of the analysis.

/18/ There are inconsistencies, however, in the lowest income category. The share of workers from the employee survey who indicated household incomes in this category exceeds the share of jobs with wages and salaries of this amount (as given by the employers). There are several possible explanations: employees were asked to indicate their 1981 household incomes, while employers were asked wages and salaries as of the time of interview (1982); employees might not have worked at the same job in 1981 or may not have worked all year, whereas wages and salaries are annual figures; there may be some confusion on the part of the respondents over part-time and full-time employment and inconsistencies in how incomes and wages and salaries were reported; those employees who responded to this question may not be fully representative of those employed; and language might have been a problem for employee respondents. If both the two lowest income categories and two lowest wage and salary categories are combined, the results are more consistent.

/19/ The employment analysis is explained in Appendix H.

/20/ The 1984 employment setting was not developed by "filling up" the additional space due to new construction and conversions, but was done by forecasting employment (independent of space), and then considering how much space would be demanded. From this comparison, it was determined that the additional space to be built by 1984 is not likely to be fully occupied in 1984.

Since the forecasts are not fully sensitive to business cycles, the 1984 employment setting might not be met by 1984 depending upon the timing of recovery from the recession of the early 1980's. If it were not achieved, there would be a larger amount of unoccupied space in 1984.

/21/ Estimates of numbers of jobs by occupation and wages/salaries were derived from occupation and wage/salary matrices and employment forecasts for all business activity groups. These were combined into the six major groups in Table IV.C.7 for presentation purposes. Changes between 1981 to 1984 in overall C-3 District employment by occupation and wages/salaries arise because of changes in the number of jobs in each business activity over this period.

/22/ The year 1981 was chosen as the base year for the forecast because this was the year when the C-3 District land use and employment data were collected and the year for which the estimate of existing conditions was made. Because of the long-term perspective of this analysis, the forecast methodology is not sensitive to business cycles. The 1984 employment

NOTES - Business and Employment (Continued)

ment estimate depends on the timing of recovery from the 1982-1983 recession. Therefore, the 1981 estimate provides a more certain starting point for the forecast. The 1981 C-3 District estimate can also be compared with other data collected for the entire City.

/23/ Retail sales have increased at a faster rate than retail employment in the past. Between 1970 and 1979 retail sales (selected categories: apparel, general merchandise, specialty goods, eating and drinking out) in San Francisco grew in real terms 1.92 percent per year, compounded. During the same period, retail employment in these same categories grew at an annual rate of 1.49 percent. (State Board of Equalization, Taxable Sales in California, 1970 and 1979, and U.S. Department of Commerce, County Business Patterns: California, 1970 and 1979.) There are several explanations for this observation. More sales can occur in existing retail space without proportional increases in employment. This happens when existing stores remodel their facilities or undertake new merchandising techniques (as has occurred recently in several major Union Square department stores). It can also be attributed to turnover of types of stores, as older stores are replaced by outlets selling higher priced merchandise (in real terms) appealing to a different customer base or are replaced by higher volume outlets (greater sales per sq. ft.). A forecast of retail sales growth has been prepared for the Downtown Plan (see Appendix H).

/24/ The procedure for "matching" employment growth and space is described in Appendix H. This procedure accounted for new space built, space demolished for new construction, the conversion of some existing space to office use, and absorption of the oversupply of newly built space as of 1984. The approach was from the perspective of business activities looking for space with various qualities, locations, and rents.

/25/ Throughout this discussion construction employment is handled separately from permanent employment. Effects on construction employment are the direct consequence of the amount of new construction, conversion and ongoing upgrading that would occur over a given time period. Thus, construction employment lasts for the duration of the construction period and is not necessarily permanent employment. Construction workers are employed when and where their particular skills are required. Therefore, construction employment due to building activity 1984-1990 and 1990-2000 is expressed as person-years of construction employment. (A person-year is a unit of labor equivalent to one construction worker's average annual wages). Over the 1984 to 1990 period, forecast building activity would support 32,190 person-years of construction employment, or annual average employment of about 5,370 (32,190 ÷ 6 = 5,370). It should be noted that "construction employment or jobs" as used in the text and tables refer to an amount of labor, not necessarily to individual workers. Appendix H in the Downtown EIR Consultant's Report contains more detail on the methodology and assumptions used to estimate construction employment.

NOTES - Business and Employment (Continued)

/26/ Retail forecasts were prepared for sales, employment, and space as described in Appendix H. Generally, retail sales show more growth over time than employment or space. Sales are probably the best measure of the level of retail activity.

Under the Downtown Plan, retail sales between 1990 and 2000 are expected to grow (in real terms) at a rate of 1.95 percent per year. Retail employment grows at a lower rate than sales (0.92 percent per year), since sales per employee are expected to increase. There are also differences over time in the ratio of sales per employee. Space also grows less than sales (0.74 percent per year), since changes are expected in sales per sq. ft. of space. Section IV.B, Land Use and Real Estate Development Impact, describes the effects of the Plan on the ability to add retail space and, thus, on the distribution of retail activity.

/27/ If the South of Market Industrial Conservation Special Use District (SUD) Interim Controls (Ordinance 574-83, adopted November 28, 1983) were to remain in effect during the period of implementation of the Downtown Plan, then conversions in Subarea 3 (about one-half of which is included in the SUD) would occur to a lesser extent than forecast and described in the text. The effects of long-term implementation of the South of Market SUD on impacts of the Downtown Plan are covered in Sections V.B and V.C, Land Use and Real Estate Development and Business and Employment Mitigation.

/28/ The density of 265 sq. ft. per employee is the weighted average over all C-3 District office activities identified in analysis of the Downtown EIR Employer Survey. It therefore reflects the mix of these activities in the C-3 District in 1981. The preceding business and employment setting discussed these employment densities in some detail. See Table H.3 of the Supplemental Tables to Appendix H for the estimated employment densities for each of the business activity components of total C-3 District office activity.

/29/ The increase in office employment densities under the Downtown Plan is applied to all office activities (in total space) and not just to the growth over the 1990-2000 period.

/30/ As described in the Business and Employment Setting and Appendix H in the Consultant's Report, analysis of the Downtown EIR Employer Survey resulted in different estimates of employment density for eight different business activities occupying office space. A five percent increase in the employment density for each of the eight business activities was assumed to occur by 2000. The employment forecasts identify the changes in the mix of business activities (each with different densities) that is expected to occur over time. When the change in densities is combined with changes in the mix of business activities in downtown office space, overall office employment densities would increase by four percent. The overall change in density is less than the change for individual groups,

NOTES - Business and Employment (Continued)

because changes in the mix of business activities (more activities with lower densities) would somewhat offset changes in employment densities for individual groups. For management/technical office activities, the overall density would increase three percent by the year 2000, from 276 to 267 gross sq. ft. per employee. For trade/customer service office activities, the density would increase four percent, from 208 to 200 gross sq. ft. per employee.

These employment densities are for occupied office space and do not include allowances for vacant office space. The process of matching employment growth and space incorporates a vacancy factor. A long-term average office vacancy rate of five percent was assumed. Therefore, the average employment density of 267 gross sq. ft. of occupied office space per management/technical office employee would be 280 gross sq. ft. of total (occupied and vacant) office space per employee.

/31/ See map, Figure H.2, at the end of Appendix H.

/32/ Consideration of citywide employment trends and patterns was part of the employment analysis conducted by Recht Hausrath & Associates for this EIR.

/33/ The differences over time in terms of the occupational mix and wage/salary distribution are probably understated in Tables IV.C.17 and IV.C.18. The reason is that changes are likely to occur within business activity groups that cannot be accurately quantified with available data. For example, the forecasts here reflect differences in the increase in jobs in business services or TCU relative to employment increases in other categories. They do not incorporate potential changes within these activities (such as the occupational differences between utilities and non-utility TCU firms). With available data from the Downtown EIR Employer/Employee Survey, separate occupation and wage/salary distributions could be identified only for executive/administrative and administrative/data processing functions in the case of FIRE. Similar distinctions probably exist within other groups. However, a larger survey sample would be required to develop accurate estimates.

D. RESIDENCE PATTERNS AND HOUSING

SETTING

C-3 District Background

Residence Patterns of C-3 District Workers

The Downtown EIR Employee Survey identified the current residence patterns of C-3 District employees./1/ As shown in Table IV.D.1 the majority of workers, 56.8 percent, live in San Francisco. The next largest numbers live in Alameda, San Mateo, Contra Costa and Marin counties, in that order. Together these four counties currently house 40.7 percent of the C-3 District workforce. The remaining 2.5 percent reside in Solano, Sonoma, Santa Clara, and Napa counties. Only a very few workers live outside the nine-county Bay region.

When C-3 District workers residing in the region outside of San Francisco are grouped by commute corridors, more than one-half live in the east bay (57 percent), more than one-quarter in the south bay (27.7 percent), and the remainder in the north bay (15.3 percent).

Residence patterns tabulated for the regional study areas used in transportation analysis are shown in Figure IV.D.1. This pattern illustrates that most of the workers residing in Alameda County live on the west side of the hills (93 percent compared to 7 percent). The opposite is true for Contra Costa County where most C-3 District workers live in the eastern part of the county (82 percent compared to 18 percent). Workers residing in San Mateo County are more evenly divided between the eastern and western portions of the county (61 percent living on the eastern or bay side and 39 percent on the west side).

Residence patterns were found to differ for workers with different types of jobs. Table IV.D.2 identifies residence patterns for workers employed in business activities of various types.

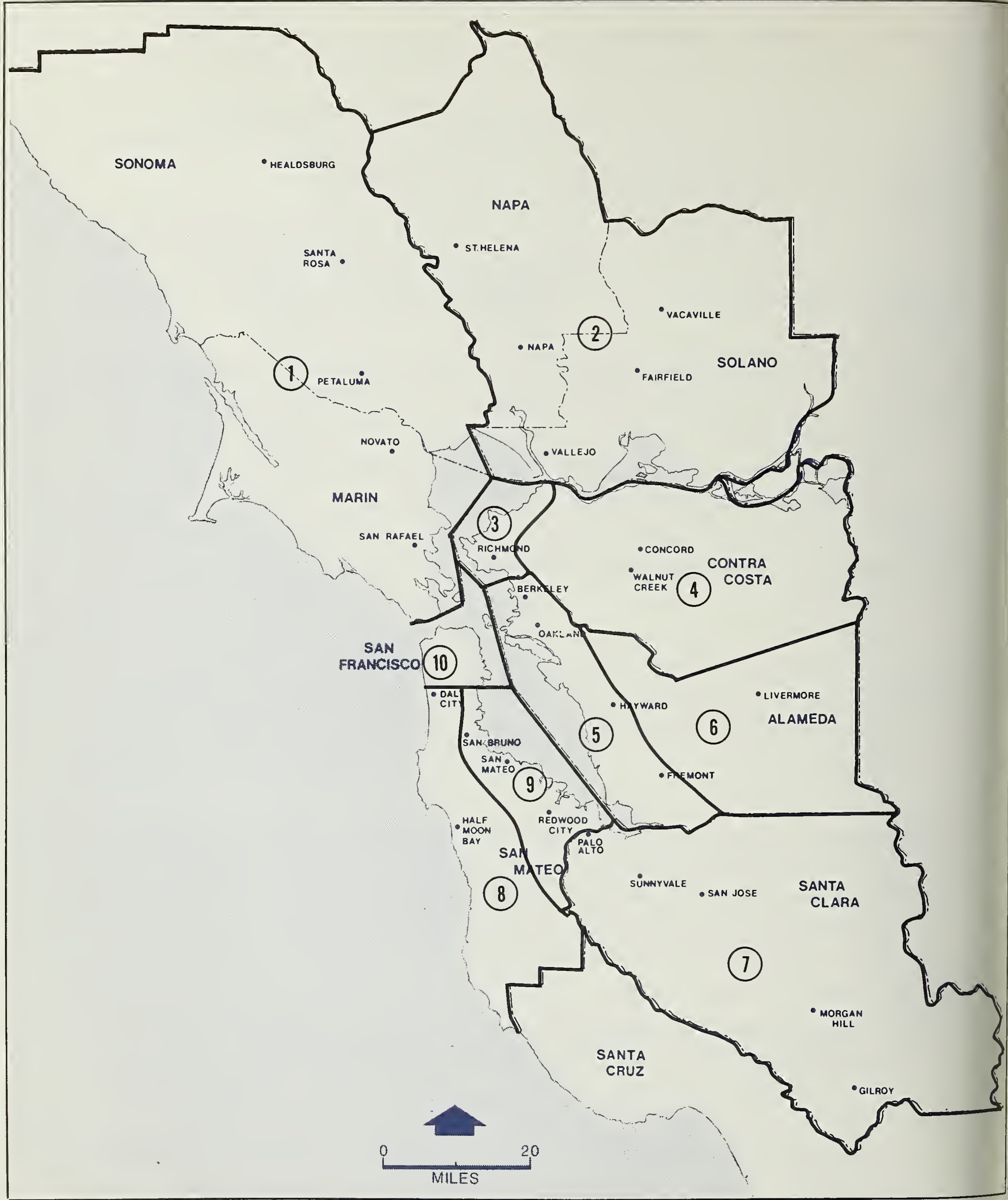
TABLE IV.D.1: RESIDENCE PATTERNS FOR C-3 DISTRICT EMPLOYEES, 1981

County of Residence	Distribution of C-3 District Employees Number	Percent
San Francisco	146,570	56.8%
East Bay	63,330	24.6%
Alameda	32,780	12.7
Contra Costa	27,760	10.8
Solano/Napa (a)	2,790	1.1
South Bay	30,860	12.0%
San Mateo	29,170	11.3
Santa Clara	1,690	0.7
North Bay	16,990	6.6%
Marin	15,260	5.9
Sonoma	1,730	0.7
Other	120	small
TOTAL	257,870	100.0%

NOTE: Residence patterns are tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) The totals shown here exclude construction workers and building maintenance/security workers that were not included in the survey sample (estimated at 12,500 jobs in 1981; see Table IV.C.1). The residence patterns of these two groups of workers are discussed in the text.

(a) Most of these workers reside in Solano County.

SOURCE: Recht Hausrath & Associates



PERCENT OF WORKFORCE RESIDING IN EACH AREA

1	Marin/Sonoma	6.6%	6	Eastern Alameda	0.8%
2	Napa/Solano	1.1%	7	Santa Clara	0.7%
3	Western Contra Costa	2.0%	8	Western San Mateo	4.4%
4	Eastern Contra Costa	8.8%	9	Eastern San Mateo	6.9%
5	Western Alameda	11.9%	10	San Francisco	56.8%

FIGURE IV.D.1:
REGIONAL HOUSING DISTRIBUTIONS OF C-3 DISTRICT WORKERS, 1981

SOURCE: Recht Hausrath & Associates

TABLE IV.D.2: EMPLOYEE RESIDENCE PATTERNS FOR THE C-3 DISTRICT, BY BUSINESS ACTIVITY, 1981

County of Residence	Total C-3 District	Management/ Technical Office	Trade/Customer Service Office	Retail	Hotel	Cultural/Institutional/ Educational
		Workers By Business Activity				
	%	%	%	%	%	%
San Francisco	56.8	48.9	64.9	77.2	82.4	72.7
Alameda	12.7	16.0	6.6	3.9	7.9	12.4
Contra Costa	10.8	14.2	3.2	7.0	1.4	4.6
Solano/Napa	1.1	1.5	0.0	0.0	0.3	0.0
East Bay	24.6	31.8	9.8	10.9	9.6	17.1
San Mateo	11.3	10.0	20.0	9.5	6.6	8.4
Santa Clara	0.7	0.9	0.2	0.0	0.0	0.1
South Bay	12.0	10.9	20.2	9.5	6.6	8.5
Marin	5.9	7.4	5.0	2.0	1.4	1.4
Sonoma	0.7	0.9	0.1	0.4	0.0	0.3
North Bay	0.6	8.3	5.1	2.4	1.4	1.7
Other	small	0.1	0.0	0.0	0.0	0.0
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

NOTE: The information in this table is tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) Employee responses are tabulated by the business activity of their employer. The information is presented to highlight differences among groups. The overall pattern is more accurate than the percentage for an individual group particularly for the trade/customer service office and cultural/institutional/educational groups where the sample size is small relative to the largez variety of types of businesses and workers in these categories. Data are not included here for workers in the industrial group because of the small number of responses received. Table IV.C.1 identifies the number of workers in each business activity.

SOURCE: Recht Hausrath & Associates

Compared to all C-3 District workers, proportionally fewer of those employed in management/technical office activities live in San Francisco and the south bay, and greater shares reside in the east bay and the north bay./2/ Proportionally greater than average shares of workers in all other business activities reside in San Francisco. The percentages who live in San Francisco are particularly high for hotel and retail workers.

Outside of San Francisco, a relatively high share of trade/customer service office workers live in the south bay in San Mateo County. For cultural/institutional/educational workers, a relatively high share live in the east bay, primarily in Alameda County. The largest shares of retail workers who do not live in the City live in San Mateo and Contra Costa counties. For hotel workers living outside the City, most live in Alameda and San Mateo counties.

The survey also included workers employed in industrial/warehouse/automotive/parking activities. Generally, the results indicate that most of these workers live in San Francisco (the majority) or San Mateo County./3/

The residence patterns derived from the survey do not include construction workers or building maintenance/security personnel. In 1981, these jobs represented about five percent of those working in the C-3 District (see Table IV.C.1). For construction workers, it is estimated that about 30-40 percent of the members of the unions registered with the San Francisco Building and Construction Trades Council live in San Francisco./4/ Those who construct buildings in the C-3 District are drawn from this pool; on average, their residence patterns are likely to be similar to the pattern for all those in the pool. Residence patterns for building maintenance/security workers are probably similar to the patterns for the non-office business activities in the C-3 District which show a higher than average percentage of City residents. If an estimate were developed, it would be reasonable to assume that the combined residence patterns for building maintenance/security and construction workers are similar to the average pattern for all of the surveyed workers in the C-3 District./5/

Observed differences in residence patterns among business activities reflect a combination of many interrelated factors. These include the occupational and wage/salary characteristics of the jobs in each group. These also include the demographic and household characteristics of the workers employed in the different jobs. The job and workforce characteristics for different business activities are described in the employment setting section (see particularly Tables IV.C.7, IV.C.8, and IV.C.9). Description of the demographic and household characteristics of workers by the county in which they reside is presented in the next part of this section to further explain the observed residence patterns described above.

Differences in residence patterns can also be observed between workers in different subareas of the C-3 District. However, it appears that these variations largely reflect differences in the types of business activities in each subarea and in the different job and workforce characteristics associated with each activity. For example, differences in residence patterns between the Union Square area, Subarea 6, and the financial district area, Subarea 1, arise primarily because one subarea has mainly management/technical office activities and the other subarea has a mix of retail, hotel, and trade/customer service office activities.

It is also likely that residence patterns vary by subarea because of differences in the accessibility of the work place from residential areas. It is difficult to isolate the effect of accessibility, however, since business activities vary by location as well.

Comparison of management/technical office activities in Subareas 1 and 2 provides an indication that accessibility has an effect on residence patterns. Compared to Subarea 1, management/technical office workers in Subarea 2 show a lower percentage who live in San Francisco and higher percentages residing in the east bay and south bay. Portions of Subarea 2 are more accessible to the AC Transit terminal, BART, the SP Depot, and to the major freeways to the east bay and south bay than are areas of Subarea 1.

However, even within the major business activity categories used in this study, there is variation in the residence patterns among different types of businesses which perform different functions. For example, within the category of management/technical office activity, employees in smaller business service firms have a somewhat different average residence pattern from employees in large data centers or from employees in large utilities or large corporate headquarters. These differences do not appear as large, however, as the differences among the major business activity categories as shown in Table IV.D.2.

Nevertheless, since business functions tend to vary by location within the C-3 District (data centers in Subareas 3 and 4 and headquarters offices in Subarea 1, for example), differences among subareas in residence patterns for workers in the same major business activity can be at least partly explained by different types of businesses and functions employing different types of labor. Thus, it is very difficult to separate the effects of business function and of transportation accessibility in explaining differences in residence patterns among subareas.

Since there are differences in residence patterns among business activities and subareas, the results of the C-3 District analysis would not necessarily apply for other parts of the City. Comparison of the results of the Downtown EIR Employee Survey with the results of a similar survey conducted recently in the areas south of Market/Folsom Streets outside the C-3 District indicates that there are differences in residence patterns for workers in these areas./6/ Overall, the C-3 District has a larger share of workers who reside in San Francisco and in the east bay while the south of Market/Folsom area has proportionally higher shares of workers who live in the south bay and the north bay. These differences appear to reflect different types of business functions in each diverse area which offer different types of jobs that employ different types of workers. Differences in job characteristics and workforce demographics appear to be the primary factors behind the different residence patterns. Yet differences in the accessibility of each area probably also play a role.

Demographics By Place Of Residence

The observed residence patterns of C-3 District workers are a result of ndividual decisions by households based on housing needs and preferences, ability to pay for housing, and on the housing choices available. Analysis of the survey data from the perspective of the types of C-3 District workers and worker households who now reside in San Francisco and in the other counties provides insights into the housing decisions that these consumers have made. In other words, a description of "who lives where" describes the past and present role of each place of residence in providing housing for those who work in the C-3 District.

The survey data by place of residence are presented in Table IV.D.3. Review of the data indicates that there are differences in the types of worker households who currently reside in each county./7/

Workers Residing in San Francisco. Although management/technical office workers include the largest number of C-3 District workers who reside in San Francisco, the percentage that they represent of all C-3 District workers who ive in the City is lower than similar percentages for all other counties. Workers in all of the other business activities represent higher than average shares of those who reside in San Francisco.

Among occupations, San Francisco houses proportionally fewer professionals and managers and greater relative shares of workers in all other occupations. Clerical workers represent the largest number of City residents who work in the C-3 District. Of note is the large percentage represented by crafts, operatives, and other labor. These workers include many who are young, relatively inexperienced and unskilled, and who work in management/technical office activities. Generally, the C-3 District workers who live in the City are younger than average.

Among ethnic groups, workers living in the City include a proportionally large share of Asians, particularly among those in crafts, operatives, and sales occupations. Those who live in the City also include a larger than average share of individuals who were not born in the United States.

TABLE IV.D.3: DEMOGRAPHIC CHARACTERISTICS OF C-3 DISTRICT WORKERS AND HOUSEHOLDS, BY COUNTY OF RESIDENCE, 1981

	Total C-3 Workforce	Workers By County					
		San Francisco	Alameda	Contra Costa	San Mateo	Marin	Other (a)
	%	%	%	%	%	%	%
Business Activity(b)							
Management/Technical Office	66.9	57	84	88	59	84	96
Trade/Customer Service Office	13.5	15	7	4	24	11	1
Retail	8.6	12	3	6	7	3	1
Hotel	5.2	8	3	1	3	1	1
Other	5.8	8	3	1	7	1	1
Occupation(b)							
Professional/ Technical	27.9	23	43	38	24	36	36
Managerial/ Administrative	16.2	11	19	23	27	33	22
Clerical	35.1	37	35	32	34	23	34
Sales	5.7	7	small	5	3	7	1
Service	4.0	5	2	1	8	small	3
Crafts, Operatives & Other Labor	11.1	17	1	1	4	1	4
Age							
Under 25	11.8	15	11	9	9	2	12
25-34	41.3	43	44	26	34	36	33
35-44	23.3	19	27	37	36	21	31
45-54	13.6	13	8	18	14	21	15
55 Plus	10.0	10	10	10	7	20	9
Median Age	34.0 yrs.	31.8 yrs.	33.8 yrs.	38.9 yrs.	36.8 yrs.	37.3 yrs.	N.A.
Foreign Born							
Yes	27.9	33	21	22	51	10	32
No	72.1	67	79	78	49	90	68
Race/Ethnicity							
Asian	25.4	29	18	20	42	5	24
Black	5.7	5	18	6	5	3	9
White	64.2	61	57	71	46	91	61
Other	4.7	5	7	3	7	1	6
Spanish Origin(c)	6.8	7	7	4	15	6	10

TABLE IV.D.3: DEMOGRAPHIC CHARACTERISTICS OF C-3 DISTRICT WORKERS AND HOUSEHOLDS, BY COUNTY OF RESIDENCE, 1981 (Continued)

		Workers By County					
	Total C-3 Workforce	San Francisco	Alameda	Contra Costa	San Mateo	Marin	Other (a)
	%	%	%	%	%	%	%
Household Composition							
Single Person	23.9	30	17	15	14	8	8
Unrelated Persons	17.5	23	13	6	3	20	1
Couple-No Children	20.2	12	23	30	28	42	23
Couple-Children	25.7	20	30	38	45	24	54
Single-Parent	8.8	11	12	10	7	4	10
Two or More Families	1.9	2	3	small	1	1	2
Other	2.0	2	2	1	2	1	2
Household Incomes (1981)							
Less than $12,000	13.4	18	5	5	11	1	2
$12,000 - 14,999	6.1	9	6	4	5	1	5
$15,000 - 24,999	23.4	33	26	15	14	16	15
$25,000 - 49,999	33.4	28	42	50	41	36	56
$50,000 - 74,999	17.0	8	16	18	26	32	19
$75,000 - 99,999	4.0	1	3	7	2	9	2
$100,000 Plus	2.7	3	2	1	1	5	1
	No.	No.	No.	No.	No.	No.	No.
Persons Per Household	2.66	2.5	2.7	2.7	3.0	2.6	3.2
Children Per Household	0.55	0.4	0.8	0.7	1.0	0.4	1.0
Workers Per Household (d)	1.80	1.8	1.7	1.7	1.8	1.8	1.9
C-3 District Workers Per Household (d)	1.34	1.4	1.2	1.2	1.2	1.3	1.2

TABLE IV.D.3: DEMOGRAPHIC CHARACTERISTICS OF C-3 DISTRICT WORKERS AND HOUSEHOLDS, BY COUNTY OF RESIDENCE, 1981 (Continued)

NOTE: The information in this table is for C-3 District employees and is tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) The tabulations exclude building maintenance/security workers and construction workers since these groups were not included in the survey sample. The totals for tabulations shown here by place of residence may differ slightly from those tabulated by business activity in Section IV.C due to rounding or to slight differences in missing responses.

(a) Includes responses from residents of Solano, Napa, Sonoma, and Santa Clara counties and from residents who live outside the nine-county Bay region. See note 9 for a description of the relative importance to the totals of responses from each county.

(b) Percentages for the total workforce do not agree with those in the employment setting (Section IV.C and Table IV.C.7) because the figures in this table exclude construction and building maintenance/security workers. There also may be some differences in the occupations of the workforce as classified by the employees (this table) or by the employers (Table IV.C.7).

(c) Spanish origin was a separate response from the ethnicity response reported above.

(d) It is possible that these estimates may be slightly low since the survey question was confusing to some respondents. See note 8.

SOURCE: Recht Hausrath & Associates

Most C-3 District workers who live in the City are in single person or unrelated individual households. San Francisco shows a strong attraction for workers in these types of households. The City attracts a relatively small share of couples with or without children. This pattern is reflected in the fact that among counties the average number of persons per household is the lowest for C-3 worker households living in San Francisco, the number of children per household is low, and the number of workers per household is relatively high. As would be expected, the average number of C-3 District workers in households with a C-3 District worker is highest in San Francisco./8/

Among household income groups, the workers who reside in San Francisco include greater shares of households with incomes under $25,000 and of $100,000 and above. Proportionally fewer City residents have incomes in the $25,000 to $100,000 range, particularly in the $50,000 - $100,000 group. Median incomes for worker households living in the City fall within the range of $15,000 - $24,999 while the medians for all other counties fall in the next higher range of $25,000 - $49,999.

Workers Residing In Other Counties. A number of characteristics differentiate those workers who reside in San Mateo County. A greater than average share are employed in business activities other than management/ technical office, particularly in trade/customer service office activities. A proportionally large share are managers and service workers and the largest number are clerical workers. They are generally older than the average. A very high percentage, over one-half, are foreign-born. Over 40 percent are Asian, with proportionally high representation among professional, managerial, and service workers. Nearly 15 percent are of Spanish origin, with high representation among professional, clerical, sales, and crafts/operatives occupations. Other ethnic groups are also highly represented.

Most C-3 District workers residing in San Mateo County live in couple households, and most of these have children. Thus the average household size is high as is the number of children per household. Household incomes show higher than average shares in the $25,000 to $75,000 categories, particularly in the $25,000 - $49,999 group.

A high percentage of C-3 District workers residing in Alameda County are management/technical office workers. Over 40 percent are professional workers, the highest percentage of any county. Most fall in the 25-44 years of age categories. Of all the counties, blacks in Alameda County represent the highest share for this racial group. This relatively high share occurs in almost all occupations. C-3 District worker households include higher than average shares of all types of households except single person and unrelated individual households. Over one-half of the households are couples, and household sizes are about average. Proportionally large shares of worker households earn $25,000 to $100,000, particularly $50,000 to $75,000. Of the five counties with the most C-3 District workers, the average number of C-3 District workers per household is lowest for Alameda County, indicating the greater relative importance of jobs in that county by comparison to job opportunities in San Francisco.

Most of the C-3 District workers residing in Contra Costa County are management/technical office workers. Proportionally high shares are professionals and managers, particularly. Sales workers are also relatively well represented. Among counties, the average age for workers residing in Contra Costa is the oldest with a particularly large share in the 35-44 age group. Among racial groups whites represent a proportionally high share. Most households are couples with and without children. Household incomes are relatively high with larger than average shares of households with incomes in the $25,000 - $100,000 range, particularly for those in the $75,000 - $100,000 category.

Most C-3 District workers living in Marin County work in management/technical office activities and in professional and managerial jobs. One-third of the C-3 District workers living in Marin are managers, the highest share of all counties. Sales workers also represent a proportionally high share. Median age is higher than average since Marin has the largest share of workers 45 to 54 and 55 years of age and older. There is less racial and ethnic mix in the C-3 workers living in Marin County as most are white. Among worker households in Marin, couples without children and unrelated individual households represent higher than average shares, particularly the former group (42 percent of all worker households in Marin). As a result, the average number of persons per household is low as is the number of children, while the number of workers per household is high. After San Francisco, the average number of C-3 District workers per worker household is higher in Marin than in any of the other counties reflecting the relative importance of San Francisco jobs compared to jobs in the county.

In addition to the five counties in which most C-3 workers live, a small share reside in the more outlying counties of the region. Of this group, about 40 percent reside in Solano County and most of the rest live in Sonoma or Santa Clara Counties (about 25 to 30 percent in each)./9/ Nearly all those who commute from these counties work in management/technical office jobs and most are professional, managerial, and clerical workers. Most reside in couple households with children and a relatively large share are couple households without children. Among all counties, average household size is the largest for workers residing in these counties. Household incomes generally fall in the middle ranges with the majority having incomes from $25,000 to $49,999. The racial and ethnic mix of these workers largely reflects the characteristics of those residing in Solano County. For Solano, proportionally large shares of worker residents are Black, Asian, and of other non-white groups, and a large share are foreign-born (about one-half). The relatively large share of workers of Spanish origin includes primarily those in Solano and Sonoma Counties.

Housing Characteristics

The majority of C-3 District workers rent the housing in which they live (57 percent as shown in Table IV.D.4). Most live in multiple unit buildings (52 percent) or in single family dwellings (44 percent). Relatively few workers live in other types of housing (including mobile homes, residence hotels, and rooms in private homes).

Housing characteristics for workers who reside in San Francisco differ from those for workers living in other Bay Area counties. In the City, nearly three-quarters are renters and most workers live in multiple unit buildings. In other counties, most workers are owners and most live in single family houses.

On the average, C-3 District workers have lived at their present residences for about six years./10/ Those who are renters move more often and averaged 4.1 years at their present residences when interviewed. For owners, the average was 8.4 years. Demographic characteristics are also important to turnover and are probably related to tenure. Generally, length of time at residence is longer as age and income increase.

Of interest is the higher than average number of years at present residence for the workers who live in San Francisco since they are primarily renters with lower than average ages and household incomes. The distribution of responses indicates relatively large numbers who moved within the last year and large numbers who have lived at their residence 10 or more years. The relatively large number in this latter group probably explains the high average. It also appears that many of the workers under 25 years of age live at home with parents. This factor could affect the average turnover for San Francisco since most of these younger workers (70 percent) live in the City and indicated that they lived at their residence for a relatively long time./11/

Amount Spent On Housing

A summary of the dollar amounts that C-3 District workers spend on housing is presented in Table IV.D.4. The amounts include rent or mortgage payments and, if paid by the occupant, utilities, property taxes, insurance, and home ownership fees. Overall, the median amount spent per month falls within the range of $400 to $599. Separate tabulations for owners and renters indicate generally higher monthly spending by owners (median in $600 to $799 range) than by renters (median in $400 to $599 range). Differences among counties in the amounts spent on housing (as shown in Table IV.D.4) are influenced by the percentage of renters and owners. The explanation of the differences among counties lies in the financial and demographic characteristics of the households residing in each county and in their preferences for the housing (type, location, price/rent) available in each place.

For example, the larger share of San Francisco residents spending lower than average amounts on housing reflects the relatively lower incomes of many worker households who are City residents and the larger share of smaller, younger households in the City who probably occupy a less than average amount of space (many more in multiple unit buildings than in single family homes, for example). Separate tabulations for owners and renters indicate that for each group, worker households living in San Francisco include proportionally more households spending lower amounts on housing than does the group of worker households residing outside of San Francisco.

TABLE IV.D.4: HOUSING CHARACTERISTICS FOR C-3 DISTRICT WORKER HOUSEHOLDS, BY COUNTY OF RESIDENCE, 1981

	Total C-3 Workforce	Worker Households By County					
		San Francisco	Alameda	Contra Costa	San Mateo	Marin	Other (a)
	%	%	%	%	%	%	%
Tenure							
Renter	57.2	74	41	24	38	34	16
Owner	42.8	26	59	76	62	66	84
Type of Dwelling							
Single Family Detached	31.5	12	51	66	59	60	72
Single Family Attached	12.0	14	6	9	12	12	12
Multiple Unit Building (b)	52.3	70	37	24	24	24	8
Other(c)	4.3	4	6	1	5	4	8
Dollar Amount Spent On Housing Per Month(d)							
Under $200	1.4	1	2	3	small	4	small
$200 - 399	20.3	24	19	11	13	13	19
$400 - 599	38.9	46	31	35	23	22	18
$600 - 799	15.0	14	18	15	19	17	19
$800 - 999	7.3	5	8	10	8	20	17
$1,000 - 1,249	7.4	4	12	14	15	3	10
$1,250 - 1,499	3.5	2	3	7	7	4	8
$1,500 Plus	6.2	4	7	5	15	17	9
	No.	No.	No.	No.	No.	No.	No.
Average Number Of Household Members Paying For Housing	1.74	1.8	1.7	1.6	1.8	1.8	1.7
Average Number Years Residing At Present Residence(e)	6.09	6.5	4.9	5.9	5.0	7.5	5.9
Average Number Years Residing In Bay Area(f)	16.76	16.4	15.5	17.4	17.3	20.0	19.7

TABLE IV.D.4: HOUSING CHARACTERISTICS FOR C-3 DISTRICT WORKER HOUSEHOLDS, BY COUNTY OF RESIDENCE, 1981 (Continued)

NOTE: The information in this table is for C-3 District employees and is tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) The tabulations exclude building maintenance/security workers and construction workers since these groups were not included in the survey sample.

(a) Includes responses from residents of Solano, Napa, Sonoma, and Santa Clara counties and from residents who live outside the nine-county Bay region. See note 9 for a description of the relative importance to the totals of responses from each county.

(b) Includes responses for 2-4 unit buildings (16.2 percent), 5-19 unit buildings (18.2 percent), and 20 plus unit buildings (17.9 percent). For the total workforce, these responses total 52.3 percent in multiple unit buildings.

(c) Includes those living in mobile homes (0.4 percent), residence hotels (0.5 percent), rooms in private houses (1.5 percent), and other responses (1.9 percent) which often included living with extended family members. For the total workforce, these responses total 4.3 percent.

(d) Includes rent or mortgage payments and, if paid by occupant, utilities, property taxes, insurance, and home ownership fees. The amounts shown here are current dollars at the time of the survey. Thus, they are early 1982 dollars.

(e) For the total workforce, the median number of years at present residence is 3.3 years indicating the effect on the overall average of respondents who have lived at their present residence for many years. See note 10.

(f) Excludes those residing outside the region. See note 10.

SOURCE: Recht Hausrath & Associates

The average number of household members paying for housing is also shown in Table IV.D.4. These averages tend to be similar to but slightly lower than the average number of workers per household. The difference probably reflects older children living at home who do not pay for housing and secondary wage-earners and/or part-time workers whose incomes supplement household finances and are allocated for expenditures other than housing.

The relationship between amount spent on housing and household incomes is summarized for C-3 District worker households in Table IV.D.5. The table shows the distribution of owners and renters by income category according to the average percentages of income spent on housing./12/ For both renters and owners, the average percentages are larger for lower income households and the percentages decline as incomes increase. Generally, within an income category, owners spend a larger percent of income on housing than do renters./13/ Overall, the percentages of income spent on housing tend to range from 10 to 50 percent./14/

The group of worker households who own their housing include proportionally more households with higher incomes and more households who spend higher than average total dollar amounts on housing than does the group of renters. These higher dollar amounts represent lower than average percentages of income, however, since incomes are also higher. Thus, in the aggregate, the overall average percents of income spent on housing are lower for the group of owners than for the group of renters. This explains the observation from Table IV.D.5 that almost one-half of the owners spend 20 percent or less of their income for housing compared to a lower share of just over one-third for the group of renters in this category. It also explains the overall averages which indicate that worker households who are owners spend about one-quarter of their income for housing and that those who are renters spend about one-third of their incomes for housing./15/

The percentages in the table also indicate that for a given income group, there can be wide variation in the amount spent on housing. For example, of the renters with household incomes of $15,000 to $25,999, 37 percent spend 20 percent or less of their income on housing, 51 percent spend from 21 to 40 percent and 12 percent spend more than 40 percent. Similarly, for owners with household incomes of $25,000 to $49,999, 46 percent spend 20 percent or less for housing, 37 percent spend from 21 to 40 percent and 17 percent spend more than 40 percent. There are several reasons for this variation./16/

TABLE IV.D.5: SPENDING FOR HOUSING AS A PERCENTAGE OF HOUSEHOLD INCOME, DISTRIBUTED BY HOUSEHOLD INCOME CATEGORIES FOR C-3 DISTRICT WORKER HOUSEHOLDS, 1981

	Percent of Household Income Spent On Housing					Percent Of Households By Income Category	Average Percent Of Income Spent On Housing
	0-20%	21%-40%	41%-60%	61+%	Total	%	%
Percentage Distribution Of RENTERS With Household Incomes:							
Under $12,000	--	20	75	5	100%	21	57
$12,000 - 14,999	1	36	48	15	100%	10	40
$15,000 - 24,999	37	51	11	1	100%	39	27
$25,000 - 49,999	59	40	1	--	100%	23	19
$50,000 - 74,999	95	5	--	--	100%	5	
$75,000 - 99,999	85	15	--	--	100%	1	13
$100,000 - Above	100	--	--	--	100%	1	
Total	35	37	25	3	100%	100%	32%
Percentage Distribution Of OWNERS With Household Incomes:							
Under $12,000	--	41	15	44	100%	2	
$12,000 - 14,999	3	16	41	40	100%	2	41
$15,000 - 24,999	37	13	35	15	100%	10	
$25,000 - 49,999	46	37	17	--	100%	52	25
$50,000 - 74,999	45	55	--	--	100%	23	20
$75,000 - 99,999	67	33	--	--	100%	4	15
$100,000 - Above	100	--	--	--	100%	6	12
Total	48	36	13	3	100%	100%	25%

TABLE IV.D.5: SPENDING FOR HOUSING AS A PERCENTAGE OF HOUSEHOLD INCOME, DISTRIBUTED BY HOUSEHOLD INCOME CATEGORIES FOR C-3 DISTRICT WORKER HOUSEHOLDS, 1981 (Continued)

NOTE: The information in this table is derived from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) The distributions and average percentages shown here are only approximate, order of magnitude average estimates. A number of assumptions were made to develop these estimates as described in note 12. The overall pattern identified here and summarized in the text is more accurate than any particular figure shown. Note 14 describes some of the possible sources of error, particularly for the higher percentages shown.

SOURCE: Recht Hausrath & Associates

Households with similar incomes can have different financial abilities to pay for housing depending on equity in a prior residence or on other wealth (investments, pensions, inheritances) or debt (car loans, college loans, illnesses). They can also differ as to their willingness and ability to pay for housing because of demographic characteristics and housing preferences. Important demographic characteristics include household type (single person, married couple, group of unrelated individuals), presence of children, and age. For example, households with similar incomes but some with children and some without could have different abilities to pay for housing depending on the income needed for the children. Again holding income constant, younger households with increasing earning power and the need for tax shelter (few existing income tax deductions) are more likely to "stretch" their resources in the short term to purchase housing, while older households with declining earnings and decreasing needs for tax shelter are not. In addition to demographic and income characteristics, housing preferences are influenced greatly by lifestyle preferences and personal tastes. For example, how much households decide they can afford to pay for San Francisco housing often depends on the strength of their preferences for the types of housing and neighborhoods that the City has to offer. The investment potential of housing also influences the willingness of households to pay for housing, as do the prices of other goods and services.

A household's ability and willingness to pay for housing also depends on housing market factors. Interest rates determine the price of housing that a household can afford based on the financial resources allocated for mortgage payments. The housing choices (units and locations at various prices and rents) available also affect amount spent on housing. Within some range, households will spend more or less of their income on housing depending on what their resources will buy or rent.

Because spending for housing is determined within the context of housing market factors, the share of income spent for housing can change as housing market conditions change. Such changes have occurred since the mid-1970's because of a combination of national, regional, and local factors. Housing now costs more that it did relative to other household expenditures and to incomes. Therefore, a given amount of financial resources purchases less housing than had been the case, and as a result households generally spend a greater share of their resources on housing. Thus, the variation in housing spending within an income category as shown in Table IV.D.5, could partly reflect differences as a function of when the housing was purchased or rented.

Tabulations similar to those in Table IV.D.5 were done separately for households who moved in the last five years. For renters, about three-fourths had moved during this time. Comparison of the distribution of renter households according to the average percents of income spent on housing indicate a very similar pattern for those who moved recently and for all renter households. For renters, whether they moved in the last five years does not appear to have much effect on the percent of income spent on housing. This probably occurs because rents can increase over time for households who do not move. It may also be the case that many of those who move seek housing with similar rents since the cost of housing is a major factor to them./17/

For owners, however, there are significant differences in the percent of income spent on housing depending on whether the household moved in the past five years. The survey tabulations indicate that about one-half of the owners surveyed moved in the last five years. Within income categories, those who moved during this period are spending larger percentages of their income on housing. Housing spending of owners who moved in the past five years is summarized in Table IV.D.6 for comparison with the information about all owners in Table IV.D.5. Overall, the average share of income spent on housing for owners who moved in the past five years is 30 percent, compared to 25 percent for all owners. Since about one-half the owners moved in the past five years, the average percentage of income spent on housing is about 20 percent for the owners who purchased their housing more than five years ago. This situation reflects the fact that mortgage payments are set at the time of purchase and are often fixed over the term of the contract. Further, it reflects the fact that housing prices increased over the past five years.

TABLE IV.D.6: C-3 DISTRICT WORKER HOUSEHOLDS WHO MOVED IN THE PAST FIVE YEARS AND WHO OWN THEIR HOUSING - SPENDING FOR HOUSING AS A PERCENTAGE OF HOUSEHOLD INCOME, DISTRIBUTED BY INCOME CATEGORIES, 1981

	Percent of Household Income Spent On Housing					Percent Of Households By Income Category	Average Percent Of Income Spent On Housing
	0-20%	21%-40%	41%-60%	61+%	Total	%	%
Percentage Distribution Of OWNERS Who Moved in Past Five Years with Household Incomes:							
Under $12,000	--	23	8	69	100%	small	45
$12,000 - 14,999	1	13	58	29	100%	2	
$15,000 - 24,999	26	8	53	13	100%	10	
$25,000 - 49,999	19	56	25	--	100%	51	31
$50,000 - 74,999	32	68	--	--	100%	30	24
$75,000 - 99,999	57	43	--	--	100%	6	19
$100,000 - Above	100	--	--	--	100%	1	10
Total	26	52	20	2	100%	100%	30%

NOTE: The information in this table is derived from the Downtown EIR Employee Survey as described in Table IV.D.5. This table is presented for comparison with the information in the previous table for all C-3 District households who are owners including those who moved in the past five years (and described by the figures above). Those who moved during this period represent about half (49 percent) of all C-3 District households who are owners. Similar data is not presented for renters who moved in the past five years since their housing expenditures appear to be similar to all renters as described in Table IV.D.5 and discussed in the text.

SOURCE: Recht Hausrath & Associates

It is important to note that the information on amount spent for housing is not a description of housing affordability as it is often defined. The data do not identify what a household with a given income should or could pay for housing; they describe what C-3 District worker households are now paying for housing. The information also provides an indication of how the spending for housing in the Bay Area appears to have changed in the recent past. However, this analysis of change only addresses the relationship between amount spent for housing and household incomes. It does not identify changes in the quality of housing services received for the dollars spent.

San Francisco Residents

Residence Patterns Within San Francisco. As previously described, more than one-half of the C-3 District workforce resides in San Francisco (56.8 percent). These workers live in neighborhoods throughout the City as summarized in Table IV.D.7. When the City is divided into quadrants, the largest numbers of workers live in the southwestern and northwestern areas of the City (see map in Figure 11.C.2). Of those residing in the City, about 70 percent live in these western areas. The remaining 30 percent splits between the northeastern and southeastern quadrants of the City. Among the 15 study districts, those with the largest number of C-3 workers include the Central, Richmond, Marina, Northeast, and Outer Sunset districts. Together, these five districts house 65 percent of the C-3 workers who live in the City.

City residence patterns for workers employed in business activities of various types are identified in Table IV.D.8. Unlike the other activities, most hotel workers live on the east side of the City (about 70 percent). The largest numbers of hotel workers live in the Downtown, South Central, and Western Addition districts, which do not house very large shares of workers in other business activities. The residence patterns of trade/customer service office and retail workers are fairly similar. Most live in the southwest and a relatively large share also reside in the northwest. The largest number of workers in each of these activities lives in the Central and Richmond districts.

TABLE IV.D.7: RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT EMPLOYEES, 1981

City Study Areas(a)	Distribution of C-3 District Employees Who Are City Residents Number	Percent
Southeast	21,390	14.6%
1 Potrero	2,200	2
2 South Bayshore	1,500	1
3 South Central	9,700	7
4 Bernal Heights	1,800	1
5 Mission	6,200	4
Southwest	57,570	39.3%
6 Central(b)	30,200	21
7 Ingleside	5,000	3
8 Outer Sunset	12,200	8
9 Inner Sunset	3,500	2
10 Buena Vista	6,700	5
Northwest	46,700	31.9%
11 Western Addition	6,700	5
12 Richmond	21,200	14
13 Marina	18,800	13
Northeast	20,910	14.2%
14 Northeast	12,900	9
15 Downtown	8,000	5
Total	146,570	100%
Estimated Building Maintenance/Security and Construction Workers Not Allocated within the City(c)	7,100	
TOTAL	153,670	

NOTE: Residence patterns are tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) The estimates for the four quadrants of the City are more accurate than the estimates for the 15 individual districts. For comparison, Table IV.D.1 identifies the percentage of the total C-3 District workforce represented by those who live in San Francisco.

TABLE IV.D.7: RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT EMPLOYEES, 1981 (Continued)

(a) See Figure II.C.2 for a map of the City Study Areas.

(b) The estimate for the Central district may be high. If so, the difference may occur in the Richmond district, which may be low. If these adjustments were made, the totals for the southwest and northwest quadrants would be more similar than shown here.

(c) Building maintenance/security and construction workers were not included in the survey sample. Thus, information about City residence patterns is not available. The estimate of the number who live in the City assumes that the average percentage of C-3 District workers residing in the City (56.8 percent) applies to workers in these activities. As discussed previously in the text, the share of construction workers living in the City is probably lower than this average while the percentage for building maintenance/security workers is probably higher than average. For certain purposes, it may not be appropriate to include the construction workers currently employed on projects in the C-3 District in the figures for C-3 District workers living in San Francisco since, at other times, some of these workers may be employed on projects outside the C-3 District.

SOURCE: Recht Hausrath & Associates

About two-thirds of the management/technical office workers live in the western portions of the City and about one-third in the eastern areas. The largest number, nearly 20 percent, live in the Marina district, followed by relatively large numbers of workers living in the Central, Richmond, and Northeast districts. The relatively small number of workers in the cultural/institutional/educational group split between the eastern and western sections of the City with the largest numbers living in the southwest and the northeast.

TABLE IV.D.8: RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT EMPLOYEES WHO ARE CITY RESIDENTS, BY BUSINESS ACTIVITY, 1981

	Total C-3 District Workers Who Live In San Francisco	Workers Who Are City Residents, By Business Activity				
		Management/ Technical Office	Trade/Customer Service Office	Retail	Hotel	Cultural/ Institutional/ Educational
	%	%	%	%	%	%
City Study Areas(a)						
Southeast	14.6	17	5	11	32	12
Southwest(b)	39.3	33	70	59	14	39
Northwest	31.9	35	20	21	18	18
Northeast	14.2	15	5	9	36	31
Total: Percent	100.0%	100%	100%	100%	100%	100%
Number	146,570(c)	84,310	22,570	17,130	10,950	5,910
City Districts With Largest Number Of C-3 District Workers(d)						
	- Central - Richmond - Marina - Northeast - Outer Sunset	- Marina - Central - Richmond - Outer Sunset - Northeast	- Central - Richmond - Outer Sunset - Marina - Ingleside	- Central - Richmond - Buena Vista - Mission - Outer Sunset	- Downtown - South Central - Western Addition - Northeast - Mission	- Central - Northeast - Richmond - Downtown - Western Addition

TABLE IV.D.8: RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT EMPLOYEES WHO ARE CITY RESIDENTS, BY BUSINESS ACTIVITY, 1981 (Continued)

NOTE: The information in this table is tabulated from responses to the Downtown EIR Employee Survey. (See Appendix F for description of the survey methodology.) Employee responses are tabulated by the business activity of their employer. The information is presented to highlight differences among groups. The overall pattern is more accurate than the percentage for an individual group particularly for the trade/customer service office and cultural/institutional/educational groups where the sample size is small relative to the large variety of types of businesses and workers in these categories. Data are not shown separately here for workers in the industrial group because of the small number of responses received. Table IV.D.2 identifies the share of total C-3 District workers in each business activity that are represented by those who live in San Francisco.

(a) See Figure II.C.2 for a map of the City Study Areas and Districts.

(b) The estimate for secondary office workers in the southwestern part of the City may be high. If so, more of these workers would live in other areas of the City, particularly the northwest.

(c) This total includes 5,700 workers in industrial/warehouse/automotive/parking activities whose residence patterns are not shown separately. Most are included in the northwest quadrant. This total does not include building maintenance/security and construction workers since information on their residence patterns within the City is not available.

(d) The five City districts with the most C-3 District workers are listed in order, starting with the district with the most workers. See Figure II.C.2 for a map of the City Districts.

SOURCE: Recht Hausrath & Associates

Citywide Perspective on San Francisco Employment and Employed Residents. Review of C-3 District information within the context of citywide data provides perspective on the role of the C-3 District in employing San Francisco's residents. The top portion of Table IV.D.9 summarizes the relevant available information about employment and population. The rest of the table uses this data for summaries from two perspectives: (1) San Francisco employment, in terms of the share of jobs held by City residents; and (2) San Francisco population, in terms of the share of residents who work in the City. Review of this information indicates that:

From Employment Perspective:

- About one-half of the jobs in San Francisco are held by City residents;
- More than one-half of the jobs in the C-3 District are held by residents;
- The percentage of C-3 District jobs held by City residents is higher than the percentage of other San Francisco jobs (outside the C-3 District) held by City residents;/18/ and
- The percentage of C-3 District management/technical office jobs held by City residents is lower than the percentage of all other San Francisco jobs held by residents.

From Resident's Perspective:

- Most employed San Franciscans work in San Francisco, about 86 percent;/19/
- About 45 percent of employed San Franciscans work in the C-3 District. This group represents about one-half of all employed residents who work in the City; and
- About one-quarter of employed San Franciscans hold C-3 District management/technical office jobs, about 20 percent hold other types of jobs in the C-3 District, and about 40 percent work in jobs located elsewhere in the City. The remaining 14 percent work outside of the City.

It is important to understand the difference between the two perspectives highlighted above in the text and in Table IV.D.9. Based on the same number of employed residents, it is possible to calculate the percentage of City jobs held by residents and the percentage of employed residents who

TABLE IV.D.9: PERSPECTIVES ON EMPLOYMENT AND EMPLOYED RESIDENTS IN SAN FRANCISCO, 1981

Relevant Information	1980	1981
San Francisco Employment(a)	578,600	589,300
San Francisco Employed Residents(b)	342,484	345,360
San Francisco Employed Residents Who Work in the City(b)	293,166	295,630
C-3 District Employment(c)	N.A.	270,370
C-3 District Workers Who Live in San Francisco(d)	N.A.	153,670
C-3 District Management/Technical Office Employment(c)	N.A.	172,550
C-3 District Management/Technical Office Workers Who Live in San Francisco(e)	N.A.	84,310
Employment Perspective: Jobs Held By Residents		
Percentage of San Francisco Jobs Held By City Residents		50.2%
Percentage of C-3 District Jobs Held By City Residents		56.8%
Percentage of City Jobs Outside C-3 District Held By City Residents		44.5%
Percentage of C-3 District Management/Technical Office Jobs Held By City Residents		48.9%
Percentage of All Other City Jobs Held By City Residents		50.8%
Resident's Perspective: Residents Who Work In The City		
Percentage of Employed Residents Who:		
- Work in San Francisco		85.6%
- Work Outside San Francisco		14.4%
Percentage of Employed Residents Who:		
- Work In C-3 District(f)		44.5%
- Work Elsewhere in San Francisco		41.1%
- Work Outside San Francisco		14.4%

TABLE IV.D.9: PERSPECTIVES ON EMPLOYMENT AND EMPLOYED RESIDENTS IN SAN FRANCISCO, 1981 (Continued)

Resident's Perspective: Residents Who Work In The City (cont'd)	1981
Percentage of Employed Residents Who:	
- Work In C-3 District Management/Technical Office Jobs(g)	24.4%
- Work In Other C-3 District Jobs	20.1%
- Work Elsewhere in San Francisco	41.1%
- Work Outside San Francisco	14.4%

NOTE: The percentages shown here are all derived from the relevant information presented in the first part of the table.

(a) California Employment Development Department (EDD) figures plus 25,000 self-employed workers (see Table IV.C.4).

(b) 1980 Census, STF-3 as tabulated by California State Census Data Center. (See note 19 regarding employed residents who work in San Francisco.) 1981 estimates by Recht Hausrath & Associates per methodology used for forecasts of residence patterns as explained later in Residence Patterns and Housing Impact and in Appendix I.

(c) See Table IV.C.1.

(d) See Table IV.D.7.

(e) See Table IV.D.8. Total includes only management/technical office workers and does not include maintenance/security personnel working in office buildings or construction workers on office building projects.

(f) If construction labor working on projects in the C-3 District in 1981 is not included with permanent C-3 District workers, the share of employed City residents working in the C-3 District is 43.3 percent. The percentages for those working elsewhere in the City or outside the City would be increased to include these workers depending on where they are counted.

(g) The percentage of employed residents who work in all C-3 District office jobs (management/technical and trade/customer service office) is 30.9 percent.

SOURCE: Recht Hausrath & Associates

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work in the City. These percentages are different because the number of jobs is larger than the number of employed residents. However, these percentages both describe the same situation, but from different perspectives. The percentage of jobs held by City residents (and by residents of other Bay Area counties) is used more often, primarily for transportation analysis. The percentage of City residents who work in San Francisco is used less often. This latter perspective is a more direct measure of the role of jobs in the City or in the C-3 District in employing San Francisco's residents.

Further information about the role of employment in the C-3 District is provided through comparison of the characteristics of C-3 District workers with those of all City residents, as shown in Table IV.D.10./20/ Generally, compared to City residents overall, those employed in the C-3 District are younger, include proportionally more Asians and Whites and fewer Blacks and persons of other races, include relatively fewer persons of Spanish origin, and have a similar mix of sexes. Among quadrants of the City, proportionally more C-3 District workers live in the southwestern and northwestern areas, relatively fewer live in the southeast, and a similar share resides in the northeast. Generally, C-3 District households include a larger share of renters, probably related to the younger age distribution of the employed group.

The differences in household composition are initially surprising. Relatively fewer of those who work in the C-3 District reside in households of single persons or of couples without children, and larger shares reside in households of other types. The main reason appears to be that, for the total City, there is a substantial share of senior citizen households who are not employed. For example, the 1980 Census indicates that 22.5 percent of San Francisco's households have householders who are over 65 years of age. These tend to be single individuals or older couples without children living at home./21/ There also may be other households (non-senior citizens) with no employed persons.

The substantial share of City households without any workers is highlighted by the finding that while residents working in the C-3 District represent about 45 percent of all employed City residents (see Table IV.D.9), the households of City residents working in the C-3 District represent about 36 percent of all San Francisco households./22/ The percent of households is

TABLE IV.D.10: DEMOGRAPHIC CHARACTERISTICS FOR CITY RESIDENTS WORKING IN THE C-3 DISTRICT AND FOR ALL SAN FRANCISCO RESIDENTS

	All San Francisco Residents, 1980 %	San Francisco Residents Working In C-3 District, 1981 %
Sex		
Female	50.2	50.6
Male	49.8	49.4
Race/Ethnicity		
White	58.2	61.2
Black	12.7	4.8
Asian	21.3(a)	29.4
Other	7.8	4.6
Spanish Origin	12.3	6.6
Median Age (yrs.)	34.1 yrs.	31.8 yrs.
Tenure		
Owners	33.7	26.3
Renters	66.3	73.7
Location Within San Francisco		
Southeast	27.2	14.6
Southwest	34.4	39.3
Northwest	23.7	31.9
Northeast	14.7	14.2
Household Composition		
Single Person	41.4	30.2
Couple-No Children	21.1	11.6
Couple-Children	13.3	19.7
Single Parent	5.8	11.0
Other(b)	18.4	27.5

TABLE IV.D.10: DEMOGRAPHIC CHARACTERISTICS FOR CITY RESIDENTS WORKING IN THE C-3 DISTRICT AND FOR ALL SAN FRANCISCO RESIDENTS (Continued)

	All San Francisco Residents, 1980	San Francisco Residents Working In C-3 District, 1981
	%	%
Household Income	(1979 Income)	(1981 Income)
Less than $15,000	47.5	27.0
$15,000 - 24,999	24.5	32.5
$25,000 - 49,999	22.2	28.5
$50,000 - 79,999	3.9	7.7
$75,000 or more	1.9	4.3
	No.	No.
Persons Per Household	2.19	2.54
Persons Under 18 yrs. Per Household	0.39	0.39
Workers Per Household	1.15 employed persons 1.22 labor force members	1.83

NOTE: The two data sources above can be generally compared although they are not for the same years. The 1980 Census data are from tabulations of files STF-1 and STF-3 prepared by the California State Census Data Center. The 1981 data for C-3 District workers residing in San Francisco are tabulated from the Downtown EIR Employee Survey. It should be noted that the C-3 District data are for workers and households with workers whereas the citywide data are for all residents (employed and not employed) and for all households (with workers and with no workers).

(a) Includes Japanese, Chinese, Filipino, Korean, Asian Indian, and Vietnamese.

(b) Includes unrelated individuals and other households.

SOURCE: Recht Hausrath & Associates

lower than the percent of employed residents because of the number of City households with no workers. It could also be the case that there are more workers in households with C-3 District workers than in all City households with workers.

Related to the differences in household composition, C-3 District worker households have a larger average number of persons per household than does the City overall. Households with C-3 District workers also have a higher average number of workers per household, about 50 percent higher than the overall City average. This difference probably reflects two factors. One is that the City overall includes a substantial share of households without any workers so that the number of workers in all households with workers is higher than the citywide average. This is the most important factor. Second, households with C-3 District workers could have a higher average number of workers per household than worker households overall.

C-3 District worker households and all City households are similar in the average number of children per household. Because of the large share of senior citizen households in the citywide figures it is probable that among all households with children, those with C-3 District workers tend to have fewer children per household on the average.

Consistent with the higher average number of workers per household the distribution of C-3 District worker households among household income categories indicates larger percentages in the higher income groups as compared to the distribution for the City overall.

C-3 District 1984 Setting

Analysis of demographic and housing market factors produced forecasts of future residence patterns for C-3 District workers. The forecasting methodology included consideration of the relationship between employment growth and housing markets and of changing demographic and housing market factors. The approach was regional in that San Francisco was considered within the context of employment and housing in the other Bay Area counties. Analysis was done for two time periods, 1981 to 1990 and 1990 to 2000. The forecasts for 1981 to 1990 provided estimates for 1984. The 1984 estimates are shown in Tables IV.D.11 and IV.D.12 and discussed below. The approach and assumptions are described in the impact section and in Appendix I. More information about changing residence patterns and trends is also provided in the impact section.

In comparison to 1981, growth is expected in the number of workers residing in every county (see Table IV.D.11). Overall residence patterns for 1984, as reflected by the percentage distribution of the workforce among counties, are very similar to the 1981 patterns. The overall average percentage of workers residing in the City is forecast to decline slightly while the percentages for the other parts of the region are forecast to increase. The largest increase in numbers of workers would be for those residing in the east bay, followed by the increase in San Francisco residents, in south bay residents, and then by those living in the north bay. This changing pattern reflects both the characteristics of the jobs which are growing in the C-3 District and changing demographic and housing market factors throughout the region.

Within San Francisco, increases are forecast for the number of C-3 District workers residing in each of the four quadrants of the City (see Table IV.D.12). The distribution of workers among quadrants is expected to shift slightly with proportionally more growth in the eastern parts of the City. Thus, there would be slight increases in the percentages of City residents living in the southeastern and northeastern areas. With construction and building maintenance/security workers included, the 153,670 residents working in the C-3 District in 1981 (see Table IV.D.7) would increase to 158,730 residents in 1984 (see Table IV.D.12), an increase of about 5,100 workers and a change of 3.3 percent.

TABLE IV.D.11: ESTIMATED RESIDENCE PATTERNS FOR C-3 DISTRICT EMPLOYEES, 1984

	Estimated Number of Employees		
County of Residence	Excluding Bldg. Maint./ Security and Const. Workers (a)	Including Bldg. Maint./ Security and Const. Workers (b)	Percentage Distribution
San Francisco	152,600	158,730	55.5%
East Bay	70,340	73,170	25.6%
Alameda	36,220	37,680	13.2
Contra Costa	30,700	31,940	11.2
Solano/Napa (c)	3,420	3,550	1.2
South Bay	33,250	34,590	12.1%
San Mateo	31,490	32,760	11.5
Santa Clara	1,760	1,830	0.6
North Bay	18,750	19,500	6.8%
Marin	16,920	17,590	6.1
Sonoma	1,830	1,910	0.7
Other	140	140	small
Subtotal	275,080	286,130	100.0%
Not Allocated to Counties	11,050	N.A.	
TOTAL	286,130	286,130	

NOTE: Based on demographic and housing analyses described in Housing Impact section and in Appendix I. These 1984 figures are estimates based on the analysis done for the 1981 to 1990 period.

TABLE IV.D.11: ESTIMATED RESIDENCE PATTERNS FOR C-3 DISTRICT EMPLOYEES, 1984 (Continued)

(a) Since building maintenance/security and construction workers were not included in the Downtown EIR Employee Survey, their residence patterns cannot be allocated to counties based solely on survey data. These numbers are presented because they are comparable to the 1981 figures (see Table IV.D.1).

(b) As explained in the text for 1981, it is possible to approximate the residence patterns of building maintenance/security and construction workers by applying the average percentage distribution for all other workers shown above. The numbers in this column are comparable to those presented in the impact section for 1990 and 2000.

(c) Most of these workers reside in Solano County.

SOURCE: Recht Hausrath & Associates

TABLE IV.D.12: ESTIMATED RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT EMPLOYEES WHO ARE CITY RESIDENTS, 1984

City Study Areas (a)	Number of Employees	Percentage Distribution
Southeast	22,410	14.7%
Southwest	59,910	39.3%
Northwest	48,300	31.6%
Northeast	21,980	14.4%
Total	152,600	100.0%
Estimated Building Maintenance/Security and Construction Workers Not Allocated within the City (b)	6,130	
TOTAL	158,730	

NOTE: Based on demographic and housing analyses described in Housing Impact section and in Appendix I. These 1984 figures are estimates based on the analysis done for the 1981 to 1990 period.

(a) See Figures II.C.2 for a map of the City Study Areas.

(b) Building maintenance/security and construction workers were not included in the Downtown EIR Employee Survey and other information about their residence patterns within San Francisco is not available. Thus, they have not been allocated to City Study Areas. If they were distributed within San Francisco similarly to all other C-3 District workers living in the City the percentages shown above would apply.

SOURCE: Recht Hausrath & Associates

IMPACT

Introduction

There are two main purposes for the housing analysis done as a part of this study. One is to forecast future residence patterns for C-3 District workers in terms of the percentage and number of workers who would live in San Francisco and in other counties throughout the region. These forecasts identify how San Francisco residents would share in the growth of downtown jobs and they are useful in considering the relationship between C-3 District job growth and the supply of labor and housing throughout the region. Future residence patterns are also a necessary input into the transportation analysis and they are part of the consideration of housing market impacts.

The second purpose is to specifically address the implications of C-3 District employment growth on housing in San Francisco. The potential effects considered are those on housing availability and prices/rents in neighborhoods throughout the City.

Approach

Future residence patterns of C-3 District workers depend on many local and regional factors. These include the following:

- The number of jobs of various types in the C-3 District since different jobs employ labor with different demographic and household characteristics and different housing preferences;/23/
- The size and distribution of the labor force throughout the region as affected by labor force participation and housing development;
- Employment growth in the C-3 District, elsewhere in San Francisco, and in the rest of the region as influencing how jobs in the C-3 District compete for labor;
- Transportation systems as affecting the accessibility (time and cost) of C-3 District job locations relative to places of residence;

- Demographic, household, and lifestyle characteristics of the region's population as affecting housing needs and preferences for units of various types and in various locations (such as the ethnic/racial mix, overall age distribution, preferences for inner-city living, or the number of workers per household); and

- The cost of housing relative to other goods and services and differences in the relative cost of housing among locations within the Bay Area.

Over time, residence patterns change as individuals move in and out of the region, change their household and lifestyle patterns, change their housing within the region, change their labor force status, and change their jobs. While employment plays a role, it is difficult to isolate and measure the effect of only one of the important factors.

The approach for forecasting future residence patterns of C-3 District workers began with an evaluation of recent changes in residence patterns within the context of trends in the types of factors listed above. It next involved consideration of future changes in demographics, housing, and labor force factors separate from specific assumptions about the C-3 District. Basically, this step evaluated if and how recent trends are likely to continue. Then consideration was given to the C-3 District within this future context. The Downtown Plan was evaluated in terms of how the amount of job growth in business activities of various types could affect the demand for housing and of how Plan policies would affect the supply of housing.

The forecasting approach is most sensitive to the split between workers who reside in San Francisco and those who live outside of the City and commute to work. The role of C-3 District employment relative to other factors is more important in San Francisco than in other counties. Further, C-3 District housing policies directly affect the supply of housing in the City and not the supply in other counties. Beyond this initial division, forecasts were prepared of residence patterns for workers in other counties of the region and within San Francisco.

The next subsections describe the recent trends reflected in changing residence patterns, the future context for the City and the region, the effect of the Downtown Plan on the supply of housing in San Francisco, and the forecasts of future residence patterns of C-3 District workers. The last subsections then consider the implications for the housing markets in San Francisco and in the rest of the region.

Changing Residence Patterns

Trends indicate that the number of San Francisco residents working in the C-3 District is increasing. The percentage that they represent of total C-3 District employment is declining. From the perspective of the region's supply of labor, the C-3 District is playing a relatively more important role in employing San Francisco's growing labor force than it is in employing the growing pool of labor residing outside of the City. Changes in population, labor force, and employment in San Francisco and the rest of the region provide background for these trends.

Population And Employment In San Francisco

Changes in the demographic make-up of the City's population have resulted in a growth of employed persons despite the overall decline in total population. As shown in Table IV.D.13, City population declined by 36,700 persons from 1970 to 1980 while the number of employed persons increased by 24,200. The growth of employed persons is a change from the decline in this group experienced during the 1960's. The declining total population between 1970 and 1980, however, is a continuation of past trends./24/

The growth of employed residents largely reflects higher labor force participation than in the past since the population aged 16 to 64 has been relatively stable./25/

During the 1970's, there was a small increase in the City's population in the working years (aged 16 to 64). Of those in older and younger age groups, there was an increase in residents 65 years of age and older (about five percent) and a relatively large decline in the population under 16 years of age (a decline of nearly 30 percent as shown in Table IV.D.13)./26/

TABLE IV.D.13: TRENDS IN POPULATION AND EMPLOYMENT IN SAN FRANCISCO, 1960, 1970, and 1980

	Total			Change			
				1960 - 1970		1970 - 1980	
	1960	1970	1980	No.	Percent	No.	Percent
Population	740,316	715,674	678,974	-24,642	-3.3%	-36,700	-5.1%
Civilian Labor Force	352,858	340,075	364,689	-12,783	-3.6%	24,614	7.2%
Employed Residents	331,156	318,311	342,484	-12,845	-3.9%	24,173	7.6%
Population 16-64 yrs.	481,893	473,623	474,379	-8,270	-1.7%	756	0.2%
Population Under 16 yrs.	164,815	142,313	100,310	-22,502	-13.7%	-42,003	-29.5%
Population 65+ yrs.	93,608	99,738	104,285	6,130	6.5%	4,547	4.6%
Households	292,345	295,265	298,956	2,920	1.0%	3,691	1.3%
Persons Per Household (a)	2.44	2.34	2.19	-.10	-4.1%	-.15	-6.4%
Employed Persons Per Household (b)	1.13	1.08	1.15	-.05	-4.4%	.07	6.5%
Employed Persons As Percent of Population	44.7%	44.5%	50.4%				
Population 16-64 As Percent of Population	65.1%	66.2%	69.9%				
Residents Working in San Francisco	307,975	283,615	293,166	-24,360	-7.9%	9,551	3.4%
Percentage of Employed Residents Who Work In San Francisco (c)	93.0%	89.1%	85.6%				
San Francisco Employment (d)	441,243	494,129	578,600	52,886	12.0%	84,471	17.1%
Percentage of San Francisco Jobs Held By Residents (e)	69.8%	57.4%	50.7%				

TABLE IV.D.13: TRENDS IN POPULATION AND EMPLOYMENT IN SAN FRANCISCO, 1960, 1970, and 1980 (Continued)

NOTE: Except as noted below, the data in this table are from 1960, 1970, and 1980 Census Reports. The 1980 Census data are from tabulations of files STF-1 and STF-3 prepared by the California State Census Data Center.

(a) These figures exclude group quarters.

(b) These ratios were derived by dividing the number of employed residents by the number of households. Since employed residents living in group quarters are not excluded, the ratios may overstate the per-household figures by a small amount. To the extent there are overestimates, these ratios are not entirely comparable to the ratios for all persons per household in the item above.

(c) These percentages are derived by dividing the number of City residents working in San Francisco by the total number of employed City residents.

(d) Since there is no consistent series of employment data, these estimates may not accurately reflect the amount of growth in each 10-year period. The 1960 employment figure is from ABAG ("The Growth of San Francisco: Three Futures for the Year 2000" prepared for Arthur Andersen & Co., May 1982). The 1970 figure is from County Business Patterns. The 1980 figure is from EDD as adjusted by RHA to include self-employed persons (see Table IV.D.9). This 1980 estimate is similar to the figure (579,900) for 1980 in County Business Patterns.

(e) These percentages are derived by dividing the number of San Francisco jobs by the number of City residents who work in San Francisco. The estimate for 1970 of 57.4 percent is lower than the 60 percent figure reported in the 1970 Census Journey To Work publication. The percentages for all years are approximate because of the possible inconsistencies between Census data and employment figures. However, they clearly indicate a declining trend.

SOURCE: Recht Hausrath & Associates

The number of households in the City has continued to increase, although by a relatively small amount. Given the population decline, the average number of persons per household has also declined. Because of the changing makeup of the population, however, the number of adults and of employed adults per household has increased. The decline has come in the number of children per household.

From 1970 to 1980, the number of employed City residents working in San Francisco increased by about 9,600. Although the percentage of residents working in the City remains high, 85.6 percent in 1980, this percentage has been declining. Reasons for this trend include the large growth of jobs in other counties of the region and the relocation of some San Francisco jobs to other counties. San Francisco's share of total regional employment has declined even though the City's employment has increased substantially. Another factor is the increase in households with more than one worker which increases the likelihood that some workers will commute to jobs outside the City.

Business activity and employment have continued to grow in San Francisco. Jobs have grown at a faster rate and by a larger amount than the number of employed residents in the City. Thus, although the number of jobs held by City residents has increased, the percent of jobs held by residents has declined. In 1980, just over one-half of the jobs in San Francisco were held by residents as shown in Table IV.D.13./27/ The declining percentage of jobs held by residents over the past twenty years reflects the fact that the labor force in the City has not grown as much as employment, while population and labor force in areas outside of San Francisco have grown by much larger amounts than they have in the City.

Data for C-3 District employment and employed residents are not available for 1970 or 1960. As identified in the setting section (see Table IV.D.9), currently about 45 percent of employed City residents work in the C-3 District and about 57 percent of C-3 District jobs are held by residents. Given the large growth of C-3 District employment during the 1970's it is probable that the number of City residents working in the C-3 District also increased during that period. It is possible that the percentage of residents working in the C-3 District remained fairly stable or even increased since those working in the C-3 District as a share of all residents working in the City likely increased./28/ From the perspective of employment, however, the share of C-3 District jobs held by residents probably declined because of the large amount of job growth relative to the lower growth of the City's labor force.

Trends In The Rest Of The Region

Demographic trends relating to age and labor force characteristics of the region's population outside of San Francisco show similarities to the trends for the City described above. From 1970 to 1980, the growth of employed persons exceeded the growth of the total population. Employed residents in the rest of the region increased by 670,000 (nearly 45 percent growth) over the past 10 years while population increased by 588,000 persons (about 15 percent growth). This reflects both the passing of the "baby boom" generation into their labor force years (26 percent increase in population 16 to 64 years and 14 percent decline in population under 16) and the increasing labor force participation of women. The growth of employed residents exceeded the growth of households so the average number of workers per household increased. The main differences between San Francisco and the rest of the region are the magnitudes of the changes, as the amount of growth was much larger in the rest of the region than in San Francisco.

Over time, there has been an increase in the number of persons living outside of San Francisco who work in the City. From 1970 to 1980, there was an increase of about 75,000 such workers. This growth also represented an increase in the percent of San Francisco jobs held by non-San Francisco residents. This trend reflects the larger growth of the labor force outside the City. By comparison, from 1970 to 1980, employment growth in San Francisco represented about 12 percent of total region-wide employment growth while the growth of the City's labor force represented about 3.5 percent of the total increase for the region. However, because of the large growth of the region's labor force and the growth of employment in areas outside of San Francisco, there also was a decline in the percentage that those working in San Francisco represent of all employed persons living outside the City. In 1980, about 13 percent of the employed persons living outside of San Francisco worked in the City and held about 49 percent of the jobs in San Francisco.

There has also been an increase in the number of persons living outside of San Francisco and working in the C-3 District and an increase in the percent of C-3 District jobs that they represent. Because of the relatively large growth of C-3 District jobs it is possible that the C-3 District now employs a larger share of the workforce of the rest of the region than it did in 1970. In 1980, about five percent of the employed persons living outside of San Francisco worked in the C-3 District. They held about 43 percent of C-3 District jobs.

Summary of Changes In San Francisco Employment, Employed Residents, And Residence Patterns

Recent changes in employment in San Francisco and in the location of employed labor throughout the region are summarized in Table IV.D.14. This table combines the information about San Francisco and the rest of the region. Although the changes are for the City overall, the same general trends apply for the C-3 District.

The changes summarized in the table should be viewed from the cumulative perspective of trends over time. The figures represent net changes reflecting the combined influence of many individual changes caused by a number of different factors. The diagram in Figure IV.D.2 identifies the different types of changes behind the net increases identified for San Francisco from 1970 to 1980. The following text provides a description of this cumulative context. The reader who is not interested in a detailed explanation of the many individual changes incorporated in the cumulative data can turn to page IV.D.54 for a discussion of the role of employment growth in the trends described above.

TABLE IV.D.14: SUMMARY OF CHANGES IN EMPLOYMENT AND RESIDENCE PATTERNS, 1970 to 1980

	San Francisco		Rest of Region (a)	
	1970	1980	1970	1980
Employed Residents (b)	318,300	342,500	1,505,000	2,174,000
-Number Working in San Francisco (c)	283,600	293,200	210,500	285,400
-Percent Working in San Francisco	89.1%	85.6%	14.0%	13.1%
Jobs in San Francisco (d)	494,100	578,600	-	-
-Number of San Francisco Jobs Held By Residents	283,600	293,200	210,500	285,400
-Percent of San Francisco Jobs Held By Residents	57.4%	50.7%	42.6%	49.3%
Net Increase in Employed Residents	24,200		669,000	
Net Increase in Residents Working in San Francisco	9,600		74,900	
Net Increase in San Francisco Jobs	84,500		-	
Net Increase in Residents Working in San Francisco as a Percent of Net Increase in Employed Residents	39%		11%	
Net Increase in Residents Working in San Francisco as a Percent of Net Increase in San Francisco Jobs	11%		89%	

NOTE: The changes summarized in this table should be viewed from the cumulative perspective of trends over time. The figures are net changes reflecting the combined influence of many individual changes caused by a number of different factors. The diagram in Figure IV.D.2 identifies the different types of individual changes behind the overall, net changes identified for San Francisco. The text provides further explanation. Since similar data are not available for the C-3 District, these figures are for all jobs and residents working in San Francisco. The same general pattern applies to the C-3 District.

TABLE IV.D.14: SUMMARY OF CHANGES IN EMPLOYMENT AND RESIDENCE PATTERNS, 1970 to 1980 (Continued)

(a) The Rest of Region includes all of the counties of the nine-county Bay Area except San Francisco which is shown separately.

(b) 1970 and 1980 Census data.

(c) Census data for San Francisco. Figures for rest of region are estimated by subtracting the number of San Francisco residents employed in San Francisco from the number of San Francisco jobs. The estimates are slightly high to the extent that some workers employed in San Francisco live outside the region. That number is very small.

(d) See Table IV.D.13.

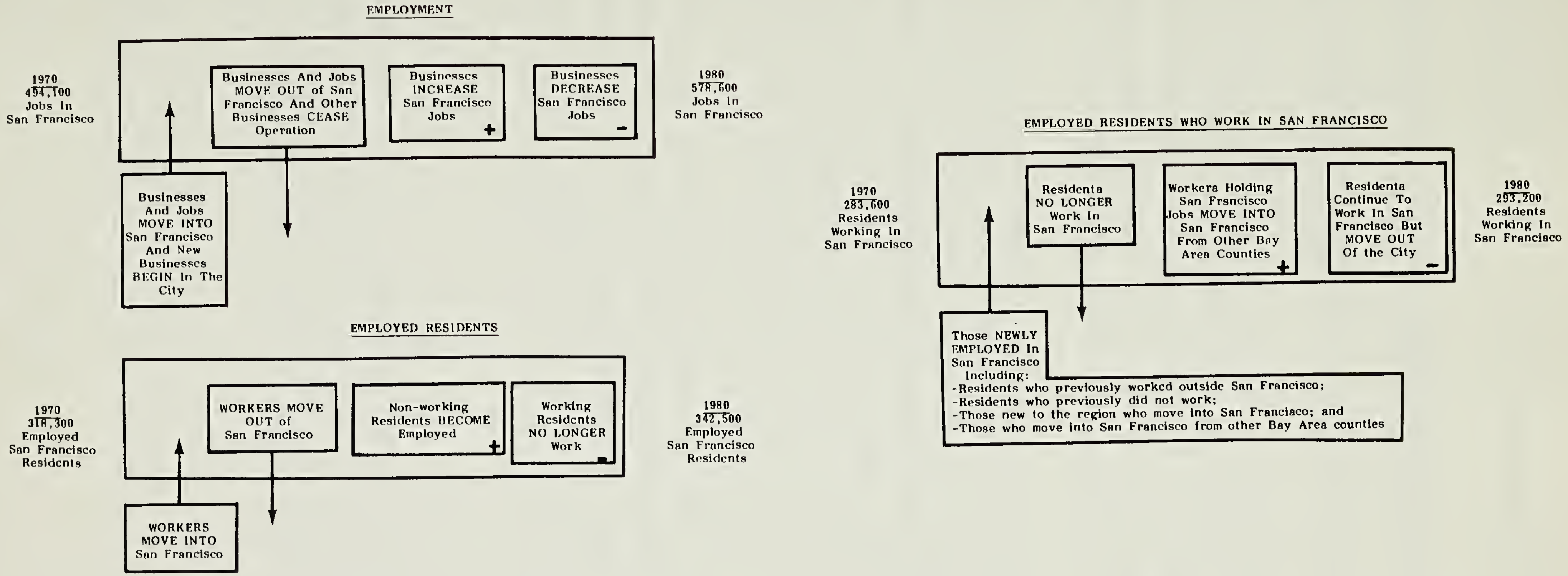
SOURCE: Recht Hausrath & Associates

The net change in employment reflects the change in the aggregate number of jobs which occurred over time because of the movement of businesses in and out of San Francisco, the creation of new businesses and the closing of existing businesses in San Francisco, and the increases and decreases in employment in existing businesses which continue to operate in San Francisco (see Figure IV.D.2). The net increases in employment from 1970 to 1980 indicate that the increases in employment during that 10-year period exceeded the decreases. The net increases in employment do not identify the number of new jobs nor the number of employment opportunities that were available in San Francisco./29/ They reflect the net change in the total amount of employment and do not apply to any specific jobs.

The net change in employed residents occurred because of changes in the employment status of San Francisco residents and because of the movement of individuals into and out of San Francisco (see Figure IV.D.2)./30/ The net increase in employed residents from 1970 to 1980 probably reflects the following:

- the number of residents who had not previously worked and who became employed exceeded the number who had worked but who retired, decided not to work, or became unemployed;

FIGURE IV.D.2: CUMULATIVE PERSPECTIVE ON EVENTS RESPONSIBLE FOR NET CHANGES IN SAN FRANCISCO EMPLOYMENT, EMPLOYED RESIDENTS, AND EMPLOYED RESIDENTS WHO WORK IN SAN FRANCISCO, 1970-1980


EMPLOYMENT
1970
494,100
Jobs In
San Francisco
Businesses And Jobs MOVE INTO San Francisco And New Businesses BEGIN In The City
Businesses And Jobs MOVE OUT of San Francisco And Other Businesses CEASE Operation
Businesses INCREASE San Francisco Jobs +
Businesses DECREASE San Francisco Jobs −
1980
578,600
Jobs In
San Francisco
EMPLOYED RESIDENTS
1970
318,300
Employed
San Francisco
Residents
WORKERS MOVE INTO San Francisco
WORKERS MOVE OUT of San Francisco
Non-working Residents BECOME Employed +
Working Residents NO LONGER Work −
1980
342,500
Employed
San Francisco
Residents
EMPLOYED RESIDENTS WHO WORK IN SAN FRANCISCO
1970
283,600
Residents
Working In
San Francisco
Residents NO LONGER Work In San Francisco
Workers Holding San Francisco Jobs MOVE INTO San Francisco From Other Bay Area Counties +
Residents Continue To Work In San Francisco But MOVE OUT Of the City −
1980
293,200
Residents
Working In
San Francisco
Those NEWLY EMPLOYED In San Francisco Including:
-Residents who previously worked outside San Francisco;
-Residents who previously did not work;
-Those new to the region who move into San Francisco; and
-Those who move into San Francisco from other Bay Area counties

NOTE: This diagram identifies the different types of events which occur over time and which are responsible for the net changes described by published data sources and shown in Table IV.D.14. The text provides further explanation on this cumulative pattern.

SOURCE: Recht Hausrath & Associates

- the number of workers moving into San Francisco exceeded the number of workers who moved out; and
- there was a net increase in the number of adults aged 16 to 64 (the ages during which individuals are active in the labor force).

The first two factors above contributed most of the net change since the increase in adults aged 16 to 64 was small relative to the growth of employed residents (see Table IV.D.13). This highlights the potential for increasing the size of the labor force residing in San Francisco without growth in population and with relatively small growth of households and housing units.

In considering residence patterns, San Francisco residents who work in San Francisco are the group of most interest. Net changes in the number of San Franciscans who work in the City occur as residents (who had not previously worked there) become newly employed in San Francisco, as residents leave their City jobs (for jobs outside the City or because they are no longer employed), and as people employed in San Francisco move into or out of the City. (See Figure IV.D.2.) The net increase from 1970 to 1980 indicates that the number of San Franciscans newly employed in the City plus the number of persons holding San Francisco jobs who moved into the City exceeded the number of residents who left San Francisco jobs plus the number holding San Francisco jobs who moved out of the City. These changes occurred as there was turnover in existing jobs, as there were increases and decreases in City employment, as there was turnover in the occupancy of the existing housing stock, and as there were increases and decreases in the City's housing units.

Based on the above explanations, it can be understood that the numbers presented in Table IV.D.14 are measurements of the overall pattern from a cumulative perspective of net changes over time./31/ The numbers do not reflect specific jobs (such as new jobs) or specific individuals (such as the newly employed). Much confusion can exist if this perspective is not understood.

In addition to the numbers presented in Table IV.D.14 to describe the totals in 1970 and 1980 and the net changes over that period, certain percentages are also shown. The percentages describe those who live and work in San Francisco as compared to either San Francisco employment or all employed residents of the City. The percentages do not indicate cause-and-effect relationships (discussed in the next subsections). The percentages are ratios used to describe how different variables compare and how the net changes over time in one variable compare to the net changes in another variable. The percentages (or ratios) provide another means of describing the cumulative pattern and of monitoring the net effects of changes over time.

One perspective is to compare the local employment of City residents with San Francisco's labor force and with the employment of persons living elsewhere in the region. For 1980, the data indicate that 85.6 percent of employed San Francisco residents worked in San Francisco. This is a very high percentage. It compares to 13.1 percent of employed persons residing elsewhere in the region who work in San Francisco. This differential between percentages indicates the greater relative importance of jobs in San Francisco to residents of the City than to residents elsewhere in the region.

The number of San Francisco residents working in the City increased from 1970 to 1980 although the percentage that they represent of all employed San Franciscans declined from 89.1 percent to 85.6 percent. Similarly, there was a decline in the percentage of employed persons residing in the rest of the region who worked in San Francisco, from 14.0 percent in 1970 to 13.1 percent in 1980. These changes indicate that jobs elsewhere in the region became relatively more important to all of the region's labor force members.

The net increase in residents working in San Francisco as a percentage of the net increase in all employed residents is higher for San Francisco than for the rest of the region (39 percent compared to 11 percent). In other words, for San Francisco as compared to the rest of the region, the growth in residents who work has continued to include proportionally more residents who work in the City. Stated another way, jobs in San Francisco have played a more important role in employing San Francisco's growing labor force than they have in employing the growing pool of labor elsewhere in the region.

For San Francisco, the ratio (39 percent) indicates how the net increase in residents working in San Francisco from 1970 to 1980 compared to the net increase in all employed persons residing in the City. It shows that the former was smaller than the latter (representing 39 percent of it) or that the latter was larger than the former (by about 2.5 times). It is because of this relationship that the overall, average pattern in 1970 (showing 89.1 percent of total employed City residents working in San Francisco) declined by 1980 (to 85.6 percent)./32/

Another perspective, is to compare the local employment of City residents and of persons living elsewhere in the region with overall San Francisco employment. For 1980, the data indicate that 50.7 percent of San Francisco jobs were held by City residents. This compares with 49.3 percent of City jobs held by persons living outside of San Francisco. The similarity of these percentages indicates that the workforce employed in San Francisco is drawn about equally from the City and from the rest of the region even though the size of the labor force in the rest of the region is much larger than in San Francisco. Since employment in San Francisco exceeds the employed population, the percentage of jobs held by City residents could not be much higher than 50.7 percent. It would be 59.2 percent if all employed San Franciscans worked in the City, which is an unlikely situation.

The number of residents working in San Francisco increased from 1970 to 1980 although the percentage of City jobs held by residents declined from 57.4 percent to 50.7 percent. During this period, there was an increase in the percentage of San Francisco jobs held by persons living elsewhere in the region, from 42.6 percent in 1970 to 49.3 percent in 1980. These changes indicate the increasing relative importance of the labor force outside of San Francisco to jobs in the City. This is highlighted by the large growth of San Francisco jobs relative to the growth of the local labor force (job growth of 84,500 compared to a 24,200 net increase in employed residents) and by the very large growth of employed residents outside of San Francisco (670,000 persons). These same reasons explain the percentages which indicate that the net increase in City residents working in San Francisco has represented a smaller percentage of total City job growth than has the net increase in residents of the rest of the region working in San Francisco (11 percent compared to 89 percent).

The reader should note that interpretation of the ratio of the net change in residents employed in the City to the net change in San Francisco jobs (11 percent) is often stated incorrectly./33/ Since San Francisco employment grew by a larger amount than San Francisco's employed population, then, on average, all jobs (new and existing) employed proportionally fewer City residents in 1980 than in 1970. Thus, the overall average percentage of jobs held by residents declined from 57.4 percent in 1970 to 50.7 percent in 1980. These are the percentages which should be used to describe the share of jobs (new and existing) held by residents at any particular time.

Role of Employment Growth In Changing Residence Patterns

The trends summarized above describe the net changes in residence patterns which occur as persons become newly employed, as others leave their jobs, and as workers change their housing. These changes reflect the combined influence of many factors.

The changes which result in individuals being newly employed in the City (who had not previously worked there) can affect overall residence patterns if those newly employed have different household and housing characteristics from those whom they replaced or from all other workers in the City./34/ They are likely to have different characteristics if the mix of types of jobs is changing (such as more office jobs relative to other types of employment), if the demographic characteristics of the workforce in general are changing (such as changes in the age distribution or the ethnic/racial characteristics), or if there are changes in the distribution of the labor force within the region (such as more growth of labor force members in the areas surrounding San Francisco than in the City itself or substantially larger growth in San Francisco employment than in employed City residents). All of these types of changes occurred in the 1970's and have contributed to the trends described previously.

The other type of change identified above specifically concerns housing market factors. As existing and newly employed workers change their housing, overall residence patterns can change. Housing factors have been particularly important in the recent past since the housing choices (housing types, prices, rents, locations) available have changed over the past five to ten years. Housing is now more costly relative to incomes and to other goods and services than it was in the past. Further, a greater share of the region's housing is now located outside of San Francisco and City housing has become more costly relative to housing in many other parts of the region than it once was. While housing choices change over time their effect on residence patterns primarily occurs when a household enters the market to purchase or rent housing. Thus, as workers change their place of residence a greater share are likely to live outside of San Francisco and those who choose to reside in the City may have different characteristics from the average of all other employees who secured housing in San Francisco under a different market situation./35/

Thus, changes in residence patterns occur as individuals are newly employed in San Francisco who had not previously worked there and as existing and newly employed workers change their housing. As explained above, only some of these changes occur because of the net growth of employment. Since the numbers of existing jobs and of existing workers are so much larger than the net growth of jobs and of workers over a given period, the overall changes in residence patterns which occur over time could be influenced more by the changes of the existing groups than by the growth of jobs and of persons newly employed because of job growth./36/

For example, the Downtown EIR Employee Survey indicates that each year about 20 percent of the workforce is newly employed downtown./37/ If this percentage applied throughout San Francisco it would indicate that, on average, about 107,300 people were newly employed in the City each year during the 1970's, including an average of 8,450 newly employed persons each year because of the net growth of jobs. This would indicate that about eight percent of those newly employed in the City each year are newly employed because of job growth./38/

Similarly, the Downtown EIR Employee Survey indicates that 25 percent of all C-3 District workers have changed their place of residence within the past year. If this percentage applied to workers throughout the City during the 1970's, it would indicate that, on average, about 134,100 workers moved each year during the 1970's, including those who moved among the group of workers newly employed each year because of the net growth of employment. Even if all of these newly employed because of job growth moved when they were employed (8,450), they would represent about six percent of all workers who moved that year. While these figures do not indicate the number who might have moved into or out of San Francisco, they provide an indication that fewer of those moves occurred because of job growth than because of the changing residence patterns of those previously or newly employed in all other City jobs./39/

These examples indicate the dynamic pattern of changes in the individuals employed in San Francisco jobs and of changes in the residence patterns of City workers. It is because of this dynamic pattern that, during the 1970's, changes in residence patterns would have occurred over time even if there had been a different amount of, or even no, employment growth in San Francisco.

Relative Importance Of Place Of Employment In Decision On Where To Live

The discussion above concludes that changes in residence patterns result from a combination of changes in the individuals who are employed in San Francisco and of changes in the places of residence of existing and newly employed workers. It also explains that only some of these changes occur because of job growth.

This subsection takes a broader perspective and considers the relative importance of place of employment in the decision on where to live for all workers (ignoring any relationships to job growth). Specifically, there are questions of whether those newly employed in the City are likely to change their place of residence when they become newly employed and of whether those who work in the City have a stronger preference for San Francisco housing because of their place of work. These issues provide further explanation of the factors behind observed residence patterns.

Individuals who are newly employed in the C-3 District include persons who have been living in the Bay Area and persons who are new to the region. The Downtown EIR Employee Survey indicated that about 38 percent of those newly employed in the C-3 District within the last year had also moved to the Bay Area within the past year. For this group, changes in place of residence occur at a similar time as changes in place of work. However, it is uncertain how many in this group came to the Bay Area because of a job in downtown San Francisco and how many moved here primarily for other reasons and then looked for a job.

The rest of those newly employed in the C-3 District include persons who already lived in the region. These individuals had either worked outside of the C-3 District or had not previously worked. The survey indicates that some of this group had moved within the year they were employed and others had not./40/ Of those who had moved, it is uncertain if or how their decision to move related to their change in place of employment.

The Downtown EIR Employee Survey asked all respondents about the relative importance of various factors in their household's decision to live at their present Bay Area location. The results clearly indicate that households make trade-offs between the time and cost of commuting to work, the cost and type of housing, and the characteristics of the neighborhood. More of those living in San Francisco and in nearby cities identified the time and cost of commuting to work as having a very positive influence on the choice of their current residence. More of those living in the outlying counties checked commuting as having a very negative influence on their housing decisions.

The setting section describes the demographic and household characteristics of workers by county of residence. Characteristics such as age, household type, ethnicity/race, and household income are all important in interpreting how proximity to one's workplace is traded off with other factors. For example, younger, single individuals who prefer the lifestyle offered by living in San Francisco may be more likely to choose an apartment in the City that provides proximity to their jobs than would a similarly aged individual who prefers warmer weather and a more suburban setting and who lives with another person who works in an outlying county.

The relative importance of proximity to workplace can also change over time as one's household situation changes. A divorce, a marriage, the birth of children, and the moving out of older children are all events which can change housing preferences and the relative importance placed on various factors. For example, proximity to work may become more important to a divorced person who no longer must consider the workplace of a spouse or schools for children. Thus, the group of existing employees includes more households who could potentially move into San Francisco than does the group of newly employed workers in any one year, since the former is so much larger than the latter.

It is not necessarily the case that one considers a residence within proximity of one's workplace. Instead, one may consider jobs near to one's preferred place of residence. For example, an individual may strongly prefer to live in San Francisco and will select a job or continue to work in the City for that reason. Thus, being employed in San Francisco does not necessarily increase one's preference for housing in San Francisco.

Therefore, it can be concluded that changing one's place of residence can be related to changing one's place of employment, although the two are not always related. Many other factors are involved. Further, changes in residence do not have to occur at the same time as changes in jobs. As for housing in San Francisco, one's place of work plays a role in the decision of where to live, but it is only one of many factors considered.

Future Context

The forecasts of future residence patterns of C-3 District workers were prepared within the context of forecasts and assumptions about how other factors besides C-3 District employment growth are likely to change over time. The future context for labor, housing and employment in the region and in San Francisco over the next 20 years is highlighted by the following:

- Labor force participation will continue to increase, but at lower rates of growth than occurred in the past ten years. Most of the baby boom generation has already entered the labor force, and the population overall is aging so that those over 65 years of age will represent an increasingly larger share of the population in the future. Although the labor force participation of women has already increased substantially, additional growth is forecast for the future.

- Because of slower growth in labor force participation, a given amount of job growth in the 1980's and 1990's will require more in-migration to the Bay Area to supply the labor force than occurred during the 1970's. The location of new housing development will have increasingly more effect on the locational distribution of the expanding supply of labor.

- The production of housing throughout the region will recover from the low levels of the early 1980's. However, the availability and cost of housing is unlikely to return to the conditions of the 1970's. Housing will remain more costly relative to incomes and to other goods and services than it was in the 1960's and 1970's.

- Housing development will occur throughout the region with proportionally more expansion at the periphery and in the center of the region. The most potential for housing development, particularly in the more affordable price ranges, exists at the periphery of the region. From these locations there is more time and cost in traveling to and from jobs in San Francisco. The increasing acceptance of higher density, central city living will support more infill residential development than has occurred in the past. These units will be added at locations in close proximity to San Francisco jobs.

- Housing forecasts indicate that the most new housing development will occur in the east bay, followed by the south bay, the north bay, and San Francisco. By 2000, the east bay and the north bay are expected to have increased their shares of total housing within the region, while the percentages for the south bay and San Francisco will have declined./41/ Compared to the net addition of housing throughout the region during the 1970's, relatively more housing growth is expected during the 1980's in San Francisco, Alameda, Contra Costa, and Solano counties.

- Employment growth is expected throughout the region. More growth is expected outside of San Francisco as the City's share of total regional employment will decline. While San Francisco and Santa Clara County will continue to be major employment centers, the east bay is expected to increase its role as a place of employment. This trend is supported by job growth in eastern Contra Costa County, Solano County, Oakland/Berkeley, and southern Alameda County.

- Within San Francisco, labor force participation is expected to increase. A major reason is that San Francisco's attraction as a place of residence is very strong among adults, many in non-family households and most of whom are employed. Labor force participation will increase as more existing residents are employed, as there is turnover of residents in the existing housing stock, and as new housing is built much of which is likely to be oriented toward singles, younger adults and generally smaller households with few or no children.

- Housing in San Francisco is expected to maintain its desirability and its current role vis-a-vis other housing throughout the region. The desirability of the City's older housing and of many of its neighborhoods is expected to support continuing upgrading of the housing stock. Prices and rents in San Francisco will remain relatively higher than those for housing in many other parts of the region.
- Within San Francisco, proportionally more of the growth of housing in the future is expected to occur in the eastern portions of the City as compared to the overall distribution of existing housing in the City. There are opportunities for larger scale, mixed use developments in the eastern areas, the City's Residence Element seeks to encourage development there, and there are redevelopment plans for housing in these areas./42/

The importance of the local and regional context can be viewed from two perspectives. One is in terms of the overall growth and distribution of labor and jobs in San Francisco and throughout the region. Many of the items listed above affect future total employment, population, housing, and labor force in each of the region's counties. The other perspective considers the extent to which those employed in the C-3 District would be drawn from the expanding labor pool in each county. This latter factor is referred to as the "propensity" to live in a particular county and work in the C-3 District.

For San Francisco, propensity to work in the C-3 District is likely to remain high. If anything, it could increase as there is turnover in the occupants of the existing housing stock and as the new housing added tends to be in areas of the City which are easily accessible to the downtown area. The propensity will also be influenced, however, by the large amount of employment to be added throughout the region.

Within the east bay, there will be differences among counties. The large growth of employment forecast for eastern Contra Costa County is likely to increase the competition for labor among residents of eastern Contra Costa and eastern Alameda counties. The extension of BART service in these areas, however, could enhance San Francisco's attraction. Among the western portions of these counties, downtown San Francisco could increase its share of workers vis-a-vis other places of employment because of two factors. Accessibility to the C-3 District is relatively good and the area is well served by public transit. Secondly, there is a large amount of housing at costs below those in many parts of San Francisco. As older east bay neighborhoods continue to become more attractive relative to other housing and are upgraded, there is a large potential to house workers employed in San Francisco. Solano County also holds some potential to supply proportionally more workers. Large amounts of new housing are forecast for the Vallejo and Benicia areas of the county which have better access to San Francisco and to BART service.

Less change is expected in the north bay and south bay. The more outlying locations are likely to supply relatively fewer workers as employment grows in each of these areas. The closer-in locations are the more likely to supply proportionally more workers although the shares of employed residents who now work throughout San Francisco are already high for these areas. Changes in the public transportation options from the south bay could enhance work locations in the C-3 District relative to other employment locations.

Future Housing Development In San Francisco

Several different scenarios for future housing development in San Francisco are possible. Many regional and national factors beyond local control will affect the outcome. Recognizing the uncertainties involved in forecasting future housing development in San Francisco, a "most likely" scenario and possible alternative scenarios were developed for the purposes of this study.

It is expected that the average addition of housing in San Francisco could range from 600 to 1,500 units per year over the 20 years from 1980 to 2000./43/ These estimates represent the addition of housing units after accounting for demolitions and conversions. The most likely scenario is estimated at an average addition of 1,000 units per year or about 10,000 units during each 10-year period. This scenario does not include housing built because of the changes in C-3 District housing policy proposed in the Downtown Plan. Also, it does not take into account housing built as a condition of office development under the City's Office-Housing Production Program (OHPP). Other proposals from the City's Residence Element to expand the supply of housing in several areas near to the C-3 District are included in these forecasts./44/

The Downtown Plan would have a small effect on housing development in San Francisco. In the C-3-G and C-3-S districts, the Plan would allow housing above the base FAR up to the maximum space permitted by other policies. This policy would encourage housing development on some C-3 District sites.

Of the 600 units forecast to be developed in the C-3 District from 1990 to 2000/45/, it is estimated that about 200 of them would represent housing built that would not have been constructed in San Francisco without the proposed changes in C-3 District policy. The other 400 units would include housing that would have been built anyway, and which is already included in the citywide housing forecast described above./46/

Assuming the proposed housing policies in the Plan were to result in the net addition of about 200 units, adding these units to the 10,000 units forecast to be built in the City under the most likely scenario for 1990 to 2000 would result in a total addition of 10,200 housing units. Thus, the proposed changes in policy regarding C-3 District housing would contribute about two percent of the total housing added in the City during the 1990's./47/

Because the City has an on-going program for housing production that is on a legislative track separate from the Downtown Plan, the OHPP is considered in the mitigation section of this EIR (see Section V.D). For purposes of comparison, it is noted here that the application of the OHPP to C-3 District office development would result in additional housing production in San Francisco, perhaps a net addition in the order of 1,800 units over the 10-year period from 1990 to 2000. The requirement would generate more housing, but not all of this production could be considered a net addition to the citywide housing stock. In addition, the OHPP would apply to office development outside the C-3 District resulting in more housing built in the City, perhaps a net addition of about 1,000 to 1,500 more units. Thus, with the Downtown Plan and the OHPP, the total production of housing in San Francisco from 1990 to 2000 could be about 13,000 to 13,500 units (10,000 units; plus 200 units because of the Downtown Plan; plus 1,800 units because of the OHPP applied to C-3 District office development; plus 1,000-1,500 units because of the OHPP applied to office development in the rest of the City). The average addition per year would be in the order of 1,300 units.

Future Residence Patterns

The forecasts of future residence patterns of C-3 District workers incorporate changes in the number and mix of types of C-3 District jobs, the forecasts of future labor force and housing in San Francisco and throughout the region, and changes in the "propensity" of individuals to live in each county and work in the C-3 District. As such the forecasts reflect the outcome of the growth of C-3 District employment within the context of changing demographic, housing market and employment factors throughout the region. The forecasting methodology is described in Appendix I.

The forecasts for San Francisco residents are described first, followed by the residence patterns for workers living in other counties of the region, and then by the distribution of San Francisco residents within the City.

Forecasts of San Francisco Residents Working In The C-3 District

Over time, the number of San Francisco residents who work in the C-3 District is expected to increase. Under the Downtown Plan, San Franciscans employed in the C-3 District are expected to increase from about 154,000 in 1981 to 173,000 in 1990, and to 189,000 by 2000./48/ This change would represent an increase of 35,000 San Franciscans employed in the C-3 District from 1981 to 2000, growth of 23 percent. Throughout the 1980's and 1990's, the number of San Francisco residents working in the C-3 District would be substantially larger than the number of persons working in the C-3 District and residing in any other Bay Area county. The forecasts are summarized in Tables IV.D.15, IV.D.16, and IV.D.17./49/

Residents Working In The C-3 District Compared To C-3 District Jobs. The percentage of C-3 District jobs held by City residents is expected to decline. The major reason is that future labor and housing growth in San Francisco will not increase in proportion to C-3 District job growth and certainly not in proportion to labor and housing growth elsewhere in the Bay Area./50/ As this occurs, the 1981 percentage of C-3 District jobs held by City residents of 56.8 percent would decline to 52.8 percent in 1990 and to 50.2 percent in 2000 under the Downtown Plan.

TABLE IV.D.15: C-3 DISTRICT EMPLOYEES RESIDING IN SAN FRANCISCO UNDER THE DOWNTOWN PLAN, 1981-2000

	1981	1984	1990	2000
Jobs In C-3 District	270,370	286,130	327,900	376,420
- Number of C-3 District Jobs Held By San Francisco Residents	153,670	158,730	173,220	189,040
- Percent of C-3 District Jobs Held by San Francisco Residents	56.8%	55.5%	52.8%	50.2%
Employed San Francisco Residents	345,360	352,670	371,370	397,990
- Number Working in C-3 District	153,670	158,730	173,220	189,040
- Percent Working in C-3 District	44.5%	45.0%	46.6%	47.5%

NOTE: The forecasts of jobs in the C-3 District include permanent employment and annual average construction employment. The forecasts of employed San Francisco residents incorporate the growth of households and increases in the number of employed persons per household. The forecasts of the number of San Francisco residents working in the C-3 District incorporate changes in the number and mix of types of C-3 District jobs, the forecasts of future labor force and housing in San Francisco and throughout the region, and changes in the propensity of individuals to live in each county and work in the C-3 District. Appendix I provides more explanation of the methodology and provides the results of sensitivity analyses of alternate assumptions.

SOURCE: Recht Hausrath & Associates

While similar general trends apply to employment in the various business activities, there are some differences among them (see supplemental tables in Appendix I). The percentage of office jobs held by San Francisco residents is forecast to decline slightly more than average. Office jobs represent the largest number of jobs and the largest amount of growth. In general, workers will continue to be more willing to commute to C-3 District office jobs than to jobs in other business activities. Further, office employees will continue to include many individuals with preferences for housing in the other counties of the region. Relatively little change is forecast for the share of hotel and retail jobs held by City residents. These workers show a strong propensity to live in San Francisco; many are younger, are single, and/or are racial or ethnic minorities. In addition, fewer of these jobs are held by workers who commute longer distances to work. Changes in the residence patterns of workers in the other business activities would be more similar to the overall pattern.

Residents Working In C-3 District Compared To All Employed San Franciscans. Over time, San Franciscans employed in the C-3 District will represent an increasing percentage of all employed residents. As shown in Table IV.D.15, the total number of San Francisco residents who are employed is forecast to increase, the number who are employed in the C-3 District will increase, and the percentage that the latter represents of the former will also increase. The forecasts indicate that, under the Downtown Plan, the 1981 percentage of employed San Francisco residents working in the C-3 District, 44.5 percent, would increase to 46.6 percent by 1990 and to 47.5 percent by 2000./51/

There are several reasons for this trend. The propensity to live and work in San Francisco will remain high. A large amount of additional housing is forecast to be developed in San Francisco. As new housing is built, it could be occupied by proportionally more C-3 District workers since they are likely to include many who have the preferences and resources for the types of new units built. Also, a larger share of the new housing is expected to be built in the downtown area or in close proximity to it. In addition, as turnover of the existing stock occurs, some who work in the C-3 District may replace others who did not work there. Furthermore, an increase in the number of existing residents who work is also projected and their propensity to work in the C-3 District will be high.

Future Residence Patterns Among Counties Outside of San Francisco

Both the number and percentage of C-3 District workers residing in counties outside of San Francisco are forecast to increase over time. The future residence patterns are summarized in Tables IV.D.16 and IV.D.17.

The most increase is expected for workers residing in the east bay. While 24.6 percent of C-3 District workers lived in the east bay in 1981, 29.3 percent are expected to reside there in 2000. This increase primarily reflects the large growth of labor and housing forecast for the east bay. It is also influenced by some increase in the propensity for workers to live in the east bay and work in San Francisco. The largest increases in the number of east bay residents working in the C-3 District are forecast for Alameda and Contra Costa counties. The largest percentage growth is expected for Solano County although the total number of C-3 District workers living in Solano County would remain relatively small.

Among the north bay and the south bay, a larger increase is expected in the number of C-3 District workers residing in the south bay although the percentage increase would be larger for workers living in the north bay.

Overall, the percentage of C-3 District workers residing in the south bay is forecast to increase from 12 percent in 1981 to 12.7 percent in 2000. Most of the increase in the south bay would be workers living in San Mateo County, although some growth is expected among those residing in Santa Clara County as well. This increase primarily reflects growth of the labor force in these counties. While there could be some increase in the propensity to work in the C-3 District among those living in the northern parts of San Mateo County, much of this potential change is likely to be offset by employment growth in the south bay and in other parts of San Francisco outside the C-3 District.

In the north bay, most of the increase in residents working in the C-3 District is expected for Marin County, although the number residing in Sonoma County is also forecast to grow. Most of the growth of north bay residents working in the C-3 District would occur because of labor force and housing

TABLE IV.D.16: ESTIMATED RESIDENCE PATTERNS OF C-3 DISTRICT WORKERS, TOTALS AND PERCENTAGE DISTRIBUTIONS FOR THE DOWNTOWN PLAN, 1981-2000

County of Residence	Number of Employees				Percentage Distributions			
	1981	1984	1990	2000	1981	1984	1990	2000
San Francisco	153,670	158,730	173,220	189,040	56.8%	55.5%	52.8%	50.2%
East Bay	66,410	73,170	90,150	110,260	24.6%	25.6%	27.5%	29.3%
Alameda	34,370	37,680	46,150	54,860	12.7	13.2	14.1	14.6
Contra Costa	29,110	31,940	38,700	47,560	10.8	11.2	11.8	12.6
Solano/Napa (a)	2,930	3,550	5,300	7,840	1.1	1.2	1.6	2.0
South Bay	32,360	34,590	40,600	47,540	12.0%	12.1%	12.4%	12.7%
San Mateo	30,580	32,760	38,210	44,600	11.3	11.5	11.7	11.9
Santa Clara	1,780	1,830	2,390	2,940	0.7	0.6	0.7	0.8
North Bay	17,810	19,500	23,730	29,320	6.6%	6.8%	7.3%	7.8%
Marin	15,990	17,590	21,180	25,820	5.9	6.1	6.5	6.9
Sonoma	1,820	1,910	2,550	3,500	0.7	0.7	0.8	0.9
Other	120	140	200	260	few	few	few	few
TOTAL (b)	270,370	286,130	327,900	376,420	100.0%	100.0%	100.0%	100.0%

NOTE: These forecasts incorporate changes in the number and mix of types of C-3 District jobs, future labor force, housing and employment in San Francisco and throughout the region, and changes in the propensity of individuals to live in each county and work in the C-3 District. Appendix I provides more explanation of the methodology and provides results of sensitivity analyses of alternate assumptions.

(a) Most of these workers reside in Solano County.
(b) Includes permanent employment and annual average construction employment.

SOURCE: Recht Hausrath & Associates

growth in these counties. A small increase in the propensity to work in the C-3 District is also expected. Overall, the 1981 percentage of 6.6 percent of C-3 District jobs held by north bay residents is expected to increase to 7.8 percent in 2000.

TABLE IV.D.17: CHANGES IN RESIDENCE PATTERNS OF C-3 DISTRICT WORKERS UNDER THE DOWNTOWN PLAN, 1981-2000

	Increase In C-3 District Workers			
	1981-1984	1984-1990	1990-2000	1984-2000
	No.	No.	No.	No.
San Francisco	5,060	14,490	15,820	30,310
East Bay	6,760	16,980	20,110	37,090
South Bay	2,230	6,010	6,940	12,950
North Bay	1,690	4,230	5,590	9,820
	% Change	% Change	% Change	% Change
San Francisco	3.3	9.1	9.1	19.1
East Bay	10.2	23.2	22.3	50.7
South Bay	6.9	17.4	17.1	37.4
North Bay	9.5	21.7	23.6	50.4

SOURCE: Recht Hausrath & Associates

Residence Patterns Within San Francisco

Over time, the residence patterns of C-3 District workers residing in San Francisco will change so that larger percentages of these workers will reside in the northeastern and southeastern portions of the City (see Table IV.D.18, columns on the left). The percentages of C-3 District workers residing in

TABLE IV.D.18: RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT WORKERS WHO ARE CITY RESIDENTS, DOWNTOWN PLAN, 1981-2000

	Totals				Changes			
City Study Areas (a)	1981	1984	1990	2000	1981-1984	1984-1990	1990-2000	1984-2000
	No.	No.	No.	No.	No.	No.	No.	No.
Southeast	21,390	22,410	24,770	28,140	1,020	2,360	3,370	5,730
Southwest	57,570	59,910	65,710	70,740	2,340	5,800	5,030	10,830
Northwest	46,700	48,300	51,470	54,790	1,600	3,170	3,320	6,490
Northeast	20,910	21,980	25,000	29,580	1,070	3,020	4,580	7,600
Total	146,570	152,600	166,950	183,250	6,300	14,350	16,300	30,650
Building Maintenance/ Security and Construction Workers Not Allocated Within the City(b)	7,100	6,130	6,270	5,790	-970	10	-480	-340
Total	153,670	158,730	173,220	189,040	5,060	14,490	15,820	30,310
	%	%	%	%	%(c)	%(c)	%(c)	%(c)
Southeast	14.6	14.7	14.8	15.4	4.8	10.5	13.6	20.4
Southwest	39.3	39.3	39.4	38.6	4.1	9.7	7.7	15.3
Northwest	31.9	31.6	30.8	29.9	3.4	6.6	6.5	11.8
Northeast	14.2	14.4	15.0	16.1	5.1	13.7	18.3	25.7
Total	100.0%	100.0%	100.0%	100.0%				

TABLE IV.D.18: RESIDENCE PATTERNS WITHIN SAN FRANCISCO FOR C-3 DISTRICT WORKERS WHO ARE CITY RESIDENTS, DOWNTOWN PLAN, 1981-2000 (Continued)

(a) See Figure II.C.2 for a map of the City Study Areas.

(b) Building maintenance/security and construction workers are not allocated to City Study Areas because they were not included in the Downtown EIR Survey. Information about their residence patterns is not available. The estimate of the number who live in the City assumes that the average percentage of all other C-3 District workers residing in the City applies to workers in these activities. If they were distributed within San Francisco similarly to all other C-3 District workers living in the City the percentages shown in this table would apply.

(c) These percentages do not include the building maintenance/security and construction workers living in the City but not allocated to City Study Areas. The percentage changes for 1984-1990 might be slightly higher if they were included since there is some growth of employment in these activities. The percentage changes for the other periods might be slightly lower than shown since a small decline is expected in these two types of employment.

SOURCE: Recht Hausrath & Associates

the southwestern and northwestern parts of the City will decline by 2000./52/ The major reason for this shift is the location of future housing development; more of the new units will be located in the eastern parts of the City. Thus it is expected that a larger percentage of total employed San Franciscans will live in the eastern areas of the City in the future.

Growth in the number of C-3 District workers is expected in all of the four quadrants of the City (See Table IV.D.18, columns on the right). The largest amounts of growth will occur in the southwest and the northeast. The largest percentage increases will occur in the northeast and southeast.

Summary Of Changes In Residence Patterns And Implications For San Francisco Population And Housing

Cumulative Perspective

The forecasts presented above indicate that the number of San Francisco residents working in the C-3 District would increase in the future under the Downtown Plan. The percentage that they represent of total employed residents of the City would increase. The percentage that they represent of total C-3 District jobs would decline.

Table IV.D.19 presents a summary of the forecast net increases in C-3 District employment and in the number of San Francisco and other Bay Area residents working in the C-3 District under the Downtown Plan./53/ These forecasts are the net result of the many changes which will occur over time as individuals become newly employed in the C-3 District, as others leave their C-3 District jobs, and as C-3 District workers change their housing. The following discussion parallels the previous discussion of citywide changes from 1970 to 1980./54/

The summary table shows that C-3 District jobs will continue to employ a much higher percentage of all workers residing in San Francisco (47.5 percent in 2000) than of workers residing elsewhere in the region (5.9 percent in 2000). Similarly, the increase in residents working in the C-3 District as a percent of the increase in all employed residents will be higher for San

TABLE IV.D.19: SUMMARY OF C-3 DISTRICT EMPLOYMENT AND RESIDENCE PATTERNS UNDER THE DOWNTOWN PLAN, 1981-2000

	San Francisco			Rest of Region (a)		
	1981	1990	2000	1981	1990	2000
Employed Residents	345,360	371,370	397,990	2,200,000	2,700,000	3,200,000
-Number Working in C-3 District	153,670	173,220	189,040	116,580	154,480	187,120
-Percent Working in C-3 District	44.5%	46.6%	47.5%	5.3%	5.7%	5.9%
C-3 District Jobs	270,370	327,900	376,420	---	---	---
-Number of C-3 District Jobs Held By Residents (b)	153,670	173,220	189,040	116,580	154,480	187,120
-Percent of C-3 District Jobs Held By Residents	56.8%	52.8%	50.2%	43.2%	47.2%	49.8%
		1981-2000			1981-2000	
Net Increase in Employed Residents		52,630			1,000,000	
Net Increase in Residents Working in C-3 District		35,370			70,540	
Net Increase in C-3 District Jobs		106,050			---	
Net Increase in Residents Working in C-3 District as a Percent of Net Increase in Employed Residents		67%			7%	
Net Increase in Residents Working in C-3 District as a Percent of Net Increase in C-3 District Jobs		33%			67%	

TABLE IV.D.19: SUMMARY OF C-3 DISTRICT EMPLOYMENT AND RESIDENCE PATTERNS UNDER THE DOWNTOWN PLAN, 1981-2000 (Continued)

NOTE: The changes shown here and the percentages are calculated from the forecasts. See Tables IV.D.15 and IV.D.16, Table IV.D.9, and Table I.2 in Appendix I and associated texts for the sources of the numbers and more description of the forecasts. Also see Appendix I for a description of the forecasting methodology. In general, the trends highlighted in this table are more important than the specific numbers. While the numbers could vary somewhat depending on the assumptions made (see Appendix I), the same overall patterns would still result.

(a) Rest of Region includes all of the counties of the nine-county Bay Area except San Francisco which is shown separately.

(b) The number of C-3 District jobs held by San Francisco residents and by persons residing in the rest of the region does not equal total C-3 District employment because a small number of jobs are held by persons residing outside the Bay Area.

SOURCE: Recht Hausrath & Associates

Francisco than for the rest of the region (67 percent compared to seven percent). Thus, for San Francisco as compared to the rest of the region, the growth of residents who work will include proportionally more residents who work in the C-3 District. Stated another way, the C-3 District will play a more important role in employing San Francisco's growing labor force than it will in employing the growing pool of labor elsewhere in the region.

For San Francisco, the ratio of 67 percent indicates that the net increase in residents working in the C-3 District from 1981 to 2000 is forecast to be smaller than the net increase in all employed persons residing in the City. However, the former would represent a larger share of the latter than currently exists for the overall, average pattern (showing 44.5 percent of total employed City residents working in the C-3 District in 1981). Thus, the overall, average percentage of City residents working in the C-3 District in 1981 would increase to 47.5 percent by 2000.

From the perspective of jobs in the C-3 District, the forecasts show that while there will be growth in both the number of jobs held by City residents and the number of jobs held by residents of the rest of the region, the increase in San Franciscans employed in the C-3 District will represent a smaller share of total C-3 District job growth than will the increase in the persons employed in the C-3 District who reside outside of San Francisco (33 percent compared to 67 percent). This relationship reflects the very large growth of the labor force outside of San Francisco and the large growth of C-3 District jobs relative to the growth of the City's workforce.

For San Francisco, the net change in residents working in the C-3 District compared to the net change in C-3 District jobs indicates that the former is likely to represent about one-third of the latter from 1981 to 2000. These changes are consistent with the forecasts that, by 2000, the number of C-3 District jobs will be nearly as large as the total number of employed residents in the City (even though there is other employment in the City and the region), and that the net increase in C-3 District employment is forecast to exceed the net increase of the City's total employed population. It should be noted that the ratio of 33 percent does not describe the share of new jobs to be taken by City residents./55/ Since C-3 District employment is forecast to increase by a larger amount than San Francisco's total employed population, then, on average, all C-3 District jobs (new and existing) would employ relatively fewer City residents in 1990 and 2000 than in 1981. Thus, the overall, average percentage of C-3 District jobs held by residents would decline from 56.8 percent in 1981 to 52.8 percent in 1990 to 50.2 percent in 2000. These are the percentages which should be used to describe the share of C-3 District jobs (new and existing) held by residents at each particular time.

Employment Benefits To City Residents

The forecasts indicate that, over time, businesses in the C-3 District will employ a larger number of San Francisco residents and a larger percentage of the City's total workforce. As a measure of the number of residents directly benefitting from downtown employment, the forecasts for the Downtown Plan indicate that by 2000, about 189,000 San Franciscans would be working in the C-3 District. This would represent an increase of about 35,000 workers over the 1981 total of about 154,000 City residents working in the C-3 District. The City's workforce is forecast to increase during this period, and the share working in the C-3 District would also increase (from 44.5 percent in 1981 to 47.5 percent in 2000)./56/

Role of Employment Growth In Forecasts

As explained earlier in this impact section, the forecasts of future residence patterns of C-3 District workers were prepared considering C-3 District employment growth under the Downtown Plan within the context of trends in demographics, housing, employment and labor force in San Francisco and throughout the region. Thus, the changes over time identified by the forecasts of future residence patterns do not solely reflect the influence of C-3 District employment growth. Further, it is not possible to separately identify the effects of employment growth.

It is accurate to say that job growth in the C-3 District would increase the number of existing City residents newly employed in the C-3 District and the number of C-3 District workers who move into San Francisco over time. Further, the more job growth there is, the larger would be the increase in each of these groups. However, the actual amount of increase is determined by other factors in addition to C-3 District employment growth. Thus, it is not accurate to conclude that the specific numerical changes identified by the forecasts are solely the result of changes in employment. C-3 District employment and employment growth play a role, but they are not the only important factors. Other factors include housing growth, changes in labor force participation, growth of employment outside the C-3 District, and changes in demographic characteristics and lifestyles as affecting preferences for San Francisco housing. Differences in these other factors could produce a different future situation even if C-3 District employment growth were the same.

Relationship To San Francisco Housing And Population

The net increases in San Franciscans working in the C-3 District do not necessarily represent corresponding increases in housing, households, or population in San Francisco. A large share of the growth of residents working in the C-3 District will occur because of changes in the characteristics of ongoing residents and because of turnover in the occupancy of the existing housing stock. As a result of these changes, labor force participation will increase and residents will change their place of work.

The addition of housing, households, and population in San Francisco contributes only a portion of the forecast net increase in residents working in the C-3 District. The changing employment characteristics of those who would live in the City with no additions to the existing housing stock are also important.

From the forecasts for the Downtown Plan, it can be estimated that about 55 percent of the increase in employed residents citywide from 1980 to 2000 could occur because of increases in labor force assuming the existing housing stock and about 45 percent because of housing growth and the net addition of households in the City./57/ If these same percentages applied to the increase in San Francisco residents working in the C-3 District from 1981 to 2000, (about 35,000) then about 19,000 (55 percent of the total increase) would be due to increases in labor force assuming existing housing and about 16,000 (45 percent of the total increase) would be due to the net addition of housing and households in the City.

Two points follow from this discussion. One is that because of increasing labor force participation of the City's population, job growth is needed to employ the growing labor force in San Francisco. While the increases in workforce would be affected by C-3 District job growth, some labor force growth will occur anyway for other reasons, such as the demographic characteristics of the existing and future residents of the City (age, sex, lifestyle, and household characteristics) and because of overall housing and household growth (separate from that influenced by C-3 District job growth or housing policy). Thus without local employment growth the current relationship between C-3 District jobs and employed residents (showing 44.5 percent employed in the C-3 District) would decline over time.

Secondly, relevant to the consideration of housing impacts, substantial growth in the City's workforce and in the residents employed in the C-3 District will occur without adding housing. Thus, it is not appropriate to assume that the increase in residents working in the C-3 District necessarily represents persons in households that will require additional housing in the City.

Implications For Housing In San Francisco

Housing Market Context

While it is not the purpose of this EIR to address the broader issues of housing in the City, it is relevant to understand that the current housing situation arises out of a local, regional, and national context. While downtown employment and employment growth play a role, the housing problems of San Francisco residents are not solely due to downtown growth.

Since the early 1970's, housing prices and rents have increased dramatically in San Francisco and throughout the Bay Area. Demand for housing has been strong and supply has not kept pace with demand in many areas. In addition, in the early 1980's there were major changes in financial markets which dramatically increased the cost of money for housing. Many different factors are contributing to the current housing market situation. These include changing lifestyles, changing demographic and household characteristics, changing household incomes, employment growth, the attractiveness of the Bay Area as a place to live, the availability and cost of financing, the attractiveness of real estate as an investment, no-growth policies in some communities, and the increasing scarcity of land in other communities.

As a result of all of these factors, many households now allocate a greater share of their financial resources to housing, and the housing choices available at various prices and rents have changed. Many people cannot now afford the housing they prefer and many are not housed at the standard that, until recently, they had come to expect. Given this housing market context, it is not surprising that there is concern for the potential housing impacts of future employment growth.

Future Competition For San Francisco Housing And Effects On Prices And Rents

The forecasts for the Downtown Plan indicate a net increase of about 35,000 San Franciscans employed in the C-3 District from 1981 to 2000. This total represents increases in the number of existing, ongoing residents employed in the C-3 District and in the number of C-3 District workers who move into San Francisco either because existing residents move out or because of the net addition of housing and households. Incorporated in this forecast is the net addition of 19,200 housing units throughout the City and increasing labor force participation for the City's population overall./58/

Consideration of the forecast increases in residents working in the C-3 District and the forecast increases in San Francisco employment and housing indicates that there is likely to be a better "match" between job growth and housing growth in San Francisco in the future than occurred in the past. The primary reason is that, as incorporated in the housing production forecasts, housing market factors and local policies and redevelopment programs, primarily, are expected to support a larger addition of housing in the City than occurred in the past two decades./59/

Although the "match" between job growth and housing growth is likely to improve, the City's housing market is expected to remain competitive in future years. San Francisco is expected to maintain its desirability as a place of residence, and prices and rents in the City generally are expected to remain relatively higher than those for housing in many other parts of the region.

Downtown employment and employment growth will continue to be among the factors supporting a competitive housing market. At a minimum, continued C-3 District employment growth would probably contribute to keeping prices and rents at their current levels in constant dollars. Depending on the future of other factors (such as interest rates and the availability of mortgage money), the "match" between housing growth and C-3 District employment growth under the Plan could contribute to a future situation where prices and rents are slightly or moderately higher on average than current levels. It is unlikely, however, that changes in housing demand and supply factors because of downtown activity alone would result in major changes in prices and rents./60/ Other housing market factors, described earlier in the impact section and in Appendix I, will also be important determinants of San Francisco's future housing market situation./61/

Implications Of Higher Housing Prices And Rents

To the extent that housing prices and rents would be higher in the future, there are several potential implications. Generally, there could be effects on the mix of types of residents in San Francisco and on the type and quality of housing that can be purchased or rented at various prices and rents. The extent to which these implications could occur would depend on all of the numerous factors affecting the City's housing market and future housing price levels. The implications described here are considered from the perspective of what could occur if greater competition for San Francisco housing resulted in higher prices and rents. In other words, the potential implications described here could occur over time but would not necessarily occur solely because of the employment growth forecast for the C-3 District under the Downtown Plan.

The implications of higher housing prices depend on how extensive the effect would be throughout the housing market. As explained in detail in Appendix I, increased competition for existing housing could result in a series of market interactions whereby consumers desiring the types of housing in greater demand substitute other housing which, in turn, increases upward pressure on prices for that other housing. These interactions could occur fairly extensively throughout the City's housing market, affecting units of different types and in different price ranges. They could also affect some types and prices of housing more than others. The outcome would depend on how much more consumers would pay for San Francisco housing of various types, whether greater competition would result in some consumers choosing housing outside of San Francisco, and on the extent to which greater competition would result in the production of more housing.

In situations where there is increased competition for housing, some households pay more for the same housing, some accept a substitute for their preferred housing, and others may not be affected. The households affected would include those with and without C-3 District workers. They would also include existing San Francisco residents and individuals who would consider a move into San Francisco at some future time. Often, the households who are affected most by higher prices and rents and who make the most sacrifices are those with fewer resources and less ability to compete for their preferred housing.

Thus, higher prices for San Francisco housing would mean that some people may decide not to move into San Francisco, current residents who rent could find it more difficult to buy a home, and some existing residents may move out of the City if they find a more acceptable housing product elsewhere. Others would continue to live in San Francisco and to pay higher prices for City housing./62/ If they did not, prices would not increase as much.

Over time, households would move into the City as additional housing is developed and as existing City residents move out. People change their housing for a variety of reasons. It is possible that in situations with higher housing prices, households would decide to move out of San Francisco or out of certain neighborhoods in the City, primarily because of the higher prices.

Effects of this type often arise most in neighborhoods with housing that is priced below average levels but which is not the lowest priced housing in the City. In a competitive housing market, consumers priced out of higher priced neighborhoods are often attracted to areas where housing can be secured initially at lower than average costs and investments made to upgrade the units. As this occurs, the desirability of the area improves and prices and rents rise. Often residents who had previously chosen the area because of its relatively lower prices and rents could be "priced out" in the upgrading process. While a more competitive housing market contributes to this phenomenon, there are other important factors. In recent years, increasing preferences for central city neighborhoods and older housing, an increase in the types of households with these preferences, and increasing incomes have been contributing factors.

Implications For Housing In The Rest Of The Region

All of the increase in C-3 District workers forecast to reside in the rest of the counties throughout the region (excluding San Francisco which has been discussed separately) does not represent a net addition of population and households in each county or in the region overall. This is primarily because labor force participation is expected to increase, thereby adding workers without necessarily adding population, households, or housing. As estimated for San Francisco, labor force growth due to increases in labor force participation can be substantial.

Furthermore, increases in the number of C-3 District workers residing in other counties do not necessarily represent increases in the number of employed residents in the region or in these counties. To the extent that C-3 District job growth would occur somewhere else in the region, if not in the C-3 District, then those employed residents would reside in the region even without C-3 District job growth.

In terms of the region's housing market, the increase in households and population that would be attributable to C-3 District job growth would represent a small share of the growth of households and housing in each county and in the total region overall. Thus, C-3 District job growth would not, by itself, make a noticeable difference in the housing markets in the individual counties or in the region overall.

As a part of total regional employment growth over the next 20 years, however, increases in C-3 District employment can be viewed as contributing to regional housing demand. A strong regional economy has and will continue to be a factor supporting a competitive regional housing market with relatively high housing prices and rents.

NOTES - Residence Patterns and Housing

/1/ See Appendix F for description of the survey methodology.

/2/ Although the percentage of management/technical office workers residing in San Francisco is the lowest among the business activities, the number of management/technical office workers residing in the City (84,310) is the highest and represents 57 percent of all C-3 workers who are San Francisco residents. The reason is that the total number of management/technical office workers is larger than the number of workers in any other business activity and larger than the total employment for all other business activities combined.

/3/ Residence patterns are not separately identified for industrial/warehouse/automotive/parking workers because of the small number of survey responses received for this group. Of the responses, about 80 percent lived in San Francisco and 20 percent in San Mateo County. While this indicates that many of these workers live in these two counties, it is likely that smaller numbers live in other Bay Area counties as well.

These findings do not necessarily imply that most workers in all industrial type businesses live in San Francisco. For example, this does not appear to be the case for workers employed in industrial activities south of Market/Folsom Streets outside the C-3 District. (See note 6 below.) The results of a similar survey in this area indicate that 45.5 percent of workers in sales/distribution/wholesale businesses reside in San Francisco and that 27.3 percent of workers in manufacturing businesses live in the City. The percentage of workers residing in San Francisco is lower for manufacturing businesses than for any of the other categories of business activities surveyed in the C-3 District or in the area south of Market/Folsom Streets.

(Continued on next page.)

NOTES - Residence Patterns and Housing (Continued)

Since the C-3 District survey included relatively few workers in industrial type businesses, the sample size could have affected the results. Beyond that, however, there are differences in the industrial activities and types of workers in each group surveyed (C-3 District and south of Market/Folsom). Generally the C-3 District workers in the industrial/warehouse/automotive/parking group appear to include more less skilled, younger, non-family, and less career-oriented workers, many of whom reside in San Francisco. The south of Market/Folsom industrial activities are much more major facilities with on-site managers, proportionally more skilled crafts workers, on-site administrative functions, and generally an older workforce with more family households, generally favoring non-San Francisco locations. More analysis of the south of Market/ Folsom survey results is required to verify and further describe this pattern.

/4/ Mr. S. Smith, San Francisco Building and Construction Trades Council, personal conversation, October 27, 1982.

/5/ Since construction workers have a lower than average percentage of City residents and building maintenance/security workers have a higher than average percentage, it is reasonable to use the average pattern for all of the surveyed workers in the C-3 District to develop an estimate of the total number of workers residing in San Francisco. It is also possible to use the overall survey percentages for estimating the workers in these two groups who live in the other counties of the region. Any error introduced by this procedure would be small since the number of workers in these two categories represented only about five percent of those employed in the C-3 District in 1981.

/6/ A survey similar to the Downtown EIR Employee Survey was conducted for the Department of City Planning by Recht Hausrath & Associates in October and November, 1982 in the area bounded by Folsom, Ninth, Berry, and Embarcadero Streets. A map of this survey area is included at the end of Appendix I. This south of Market/Folsom Survey used a methodology similar to that of the Downtown EIR Survey and the same questionnaire. Since the main purpose of this second survey was to develop transportation information, detailed analysis of residence patterns and workforce characteristics has not yet been done. The references to the south of Market/Folsom Survey made in this EIR are based on only selected tabulations of the survey data.

/7/ The percentage figures in Table IV.D.3 can be viewed in two ways. One is to identify the percentage of workers or households residing in a particular county who possess certain characteristics. For example, the table shows that 57 percent of the C-3 District workers residing in San Francisco are primary office workers. Another perspective is to compare the percentages for individual characteristics across counties and with the average percents for the total C-3 District workforce. This comparison highlights the differences in characteristics among residents of different counties. For example, the percentage that management/technical office workers represent of the workers residing in each county is

NOTES - Residence Patterns and Housing (Continued)

lower than average in San Francisco and San Mateo Counties (57 and 59 percent compared to 67 percent overall) and higher in all other counties (from 84 to 96 percent.) Since the purpose of the text is to highlight the differences in characteristics by place of residence, this second perspective is the most relevant. References to proportionally or relatively larger or smaller shares mean that a county has a greater or lower than average percentage of workers with certain characteristics.

/8/ The survey estimates of workers per household and of C-3 District workers per household may be slightly low since the survey questions were confusing to some respondents. The survey asked "counting yourself, how many.....". The responses indicate that some respondents did not count themselves. Since responses of zero are not possible, the zeros could be changed to 1. It is uncertain, however, if the response should have been more than 1 or if responses of 1 or 2 should have been higher. This factor is unlikely to significantly affect the averages, however.

/9/ As shown in Table IV.D.1, about 6,300 workers reside in Solano, Napa, Sonoma, and Santa Clara counties and in counties outside the Bay region. Of these about 43 percent reside in Solano, 27 percent each in Sonoma and Santa Clara, and the remaining three percent in Napa and outside the region. In total, workers residing in these counties represent a small share of the C-3 District workforce (about 2.5 percent).

/10/ The survey responses do not indicate the total length of time that respondents will live at their present residences (or will reside in the Bay Area). Rather, they indicate the length of time that respondents had lived at their present residences when interviewed. On the average, the responses should indicate about one-half of the total length of time that respondents will live at their present residences. Thus, the responses should be doubled to estimate the average total number of years.

/11/ Workers under 25 years of age represent 12.3 percent of the C-3 District workforce, and 69.6 percent of these younger workers live in San Francisco. (They represent 15.1 percent of City residents working in the C-3.) Nearly half of these younger City residents (47.4 percent) said they had lived at their present residence for 10 years or more. (About 55 percent said they had lived at their residence 5 years or more.) Most of these workers also indicated that they were in households of single parents or couples with children and in owner-occupied housing.

/12/ As noted in Table IV.D.5, the percent of income figures are only approximate, order of magnitude estimates that are useful in describing the overall pattern. They were derived by comparing the responses to two separate survey questions: annual household income (before tax for 1981) and amount spent per month on housing (current amount at time of survey in 1982). Since the responses to each question indicate the category within which the income or housing amount falls, the percentage of income spent on housing for each respondent also falls within a range and is not a single number. The distributions in Table IV.D.5

NOTES - Residence Patterns and Housing (Continued)

were derived by assuming the midpoint for each range. For example, for a household with annual income in the category $15,000 - 24,999 and spending for housing of $400 - 599 per month, the percent of income spent on housing could be in the range of 19 percent ($400 x 12 months / $24,999) and 48 percent ($599 x 12 months / $15,000). Using midpoints, the response was recorded as 30 percent ($500 x 12 months / $20,000). In some cases, the response categories were open-ended such as for incomes of $100,000 and above. To estimate percentages for these categories the following assumptions were made: incomes of less than $12,000 were assumed to be $10,000; incomes of $100,000 or more were assumed at $120,000; spending on housing of under $200 per month was assumed at $175; and spending on housing of $1,500 or more per month was assumed at $1,650. Alternate assumptions could be made although they are unlikely to materially affect the results. In some cases, the responses indicated that amount spent on housing was 100 percent or more of household income. These responses were not included in the summary tabulations in Table IV.D.5.

/13/ The percentages are not entirely comparable for owners and renters since there may be income tax advantages to owners which reduce the after-tax cost of housing for owners.

/14/ As shown in Table IV.D.5, about 3 percent of the respondents indicated that they spend 60 percent or more of their household income on housing. These respondents fall in the lower income categories. In combination with the other information, these responses support the conclusion that those with lower incomes spend the largest percentages of income on housing. Yet it is unlikely that these higher percentages (60 percent or more) are realistic amounts. Since many of those with lower incomes might share housing with roommates or family members, it is possible that their responses to the questions about income and amount spent on housing were not both consistent with respect to figures for the total household. Instead, one response might have included the income of only one household member, for example. It is also possible that the respondent did not have accurate information about household income and spending, which could be the case for those living with parents or other family members, particularly. As noted previously, a large share of workers under 25 years of age appear to live at home with parents and many indicated that their housing was owned. In addition, the use of midpoints in estimating the distributions in Table IV.D.5 (see note 12) could have also contributed to over-estimates of percent of income spent on housing if more of the respondents had lower than average percentages.

/15/ It should be noted that for owners, the percentages discussed are percentages of household income spent for housing payments and expenses of the types identified. They are not ratios of income to housing prices. The price of housing that could be amortized by the payments identified depends on interest rates for financing and the amount of downpayment or equity invested.

NOTES - Residence Patterns and Housing (Continued)

/16/ For a more thorough discussion of the factors which affect the amount spent on housing see Recht Hausrath & Associates, The Feasibility of Performing A Housing Affordability Analysis Relevant to Office Growth in Downtown San Francisco, July 1982, pages 15-21. A copy is on file at the Department of City Planning, 450 McAllister Street, San Francisco.

/17/ Since renters include proportionally more households with lower incomes, they may have more difficulty increasing the share of income spent for housing as rents rise. Thus, when many renters move they may be more likely to accept a lower quality of housing in order to maintain a manageable monthly rent. The analysis summarized here only addresses the relationship between the amount spent on housing and household incomes. It does not identify changes in the quality of housing services received.

/18/ While some of the percentages shown in Table IV.D.9 are approximate since they result from the combination of information from several sources (Census, EDD, C-3 District Survey and analysis in this study) the patterns they indicate are more accurate. The finding that the percentage of C-3 District jobs held by City residents is higher than the percentage of other San Francisco jobs held by City residents was partly confirmed by the recent south of Market/Folsom survey (see note 6). The results of that survey indicate that 44.5 percent of the workers in the south of Market/Folsom area live in the City in comparison to 56.8 percent of C-3 District workers who live in the City.

/19/ The percentage of employed San Franciscans who work in San Francisco of 85.6 percent comes directly from the Census report cited in Table IV.D.9. It represents the number who reported that they worked in San Francisco as a percentage of all employed persons who reported place of work. To develop the estimate of 293,166 shown in Table IV.D.9, this percentage (85.6 percent) was applied to the number of employed San Francisco residents (342,484 as reported in the Census). This procedure implies that employed residents who did not report place of work are distributed similarly to those who answered this question (i.e. it implies that 85.6 percent work in San Francisco). If the number from the Census report was used instead of the percentage, it would imply that all of the non-respondents are employed outside of San Francisco. This is a less likely situation.

/20/ As noted in Table IV.D.10, the data for the C-3 District and for the City are not entirely comparable. The most important difference is that the C-3 District data are for workers and households with workers whereas the citywide data is for all residents (employed and not employed) and for all households (with workers and with no workers). Thus, differences between the groups could reflect differences among those who work and those who do not work as well as differences in the characteristics of workers or of households with workers. Another difference is that the citywide data are for 1980 and the C-3 District information is for 1981. This difference should not significantly affect overall comparability.

NOTES - Residence Patterns and Housing (Continued)

/21/ The 1980 Census data shows the following relevant to the percentage of households that may not have employed persons because they are retired, senior citizens: 25.8 percent of the City's households have persons over 65 years of age; 22.5 percent of the City's households have householders who are over 65 years of age; and 28.5 percent of single person households in the City are over 65 years of age. (1980 Census, STF-1 as tabulated by the California State Census Data Center.)

/22/ Other comparisons indicate the following regarding the percentage of City households with C-3 District workers in 1981: City households with C-3 District workers represent 36.6 percent of all City households; City households with C-3 District primary office workers represent about 20 percent of all City households; office workers (holding primary and secondary office jobs) represent about 25 percent of all City households. These estimates assume 1.4 C-3 workers per San Francisco household with C-3 workers (see Table IV.D.3) and 299,960 households in San Francisco in 1981 (Recht Hausrath & Associates estimate).

/23/ See setting descriptions in employment and housing sections, particularly Tables IV.C.7, IV.C.8, IV.C.9, and IV.D.2.

/24/ There are indications that since the late 1970's, the decline in San Francisco's population has leveled off and that, since 1980, City population has increased. The California State Department of Finance estimates that San Francisco's population increased by about 26,700 persons from 1980 through 1982. As of January 1, 1983, the State estimates San Francisco's population at 705,700. (California State Department of Finance, "Population Estimates", May 1, 1983.) Housing market factors combined with demographic trends and lifestyle factors are probably responsible for this change in what had been a long-term trend of decline. The permanence of this new pattern over the long term future is unclear.

/25/ Although male residents still have a higher labor force participation rate than women, the increase in participation has occurred solely among women residents. Since 1960, the share of the male population in the labor force has declined.

/26/ These trends in the age distribution of San Francisco's population are summarized from the perspective of three groups: persons under 16 years of age, persons 16 to 64 years, and persons 65 years of age and over. These groups were chosen to highlight population changes for those in their working years (aged 16-64) separate from the population changes for younger and older age groups. This is not to say that subgroups within each of these three groups might not show a different pattern. (Continued on next page.)

NOTES - Residence Patterns and Housing (Continued)

If the City's population is disaggregated by age into smaller groups (such as by five- or ten-year age intervals), the data show declines from 1970 to 1980 in some of the subgroups over 16 years of age. For example, the relatively stable pattern for the group of those aged 16 to 64 years includes increases in persons aged 25 to 44 and declines in those in the 16 to 24 and 45 to 64 groups. Similarly, of the growth in the group aged 65 and over, there was a decline in those 65 to 74 and growth of persons 75 and over. For those 16 and under, there were declines in all age subgroups.

/27/ It is important to understand the difference between the two percentages shown at the bottom of Table IV.D.13 and discussed in this paragraph and in the previous paragraph of the text. They describe the same situation from two different perspectives. In each case, the number of City residents working in San Francisco is compared to another, larger group. In the first percentage shown in the table, the number of City residents working in San Francisco (293,166 in 1980) is divided by the total number of San Franciscans who work (342,484 in 1980). The result is 85.6 percent for 1980 and indicates that the large majority of employed San Franciscans work in the City. The second percentage shown is derived by dividing the number of City residents working in San Francisco (293,166 in 1980) by the total number of jobs in the City (578,600). The result is 50.7 percent and indicates that about half of the City's jobs are held by residents. Since the number of jobs (578,600) exceeds the number of employed City residents (342,484), this second percentage must be lower than the first. The distinction between these two perspectives is used throughout this section. Also see Table IV.D.9 and the associated text in Section IV.D, Residence Patterns and Housing Setting.

/28/ There are indications that the percentage of employed San Franciscans who hold downtown office jobs has increased. Analysis done for the SPUR study in 1974 estimated that office workers in the downtown area who lived in San Francisco represented 22 percent of employed San Francisco residents (San Francisco Planning and Urban Research Association, Impact of Intensive High Rise Development On San Francisco, Final Report June 1975, p. 153). This EIR estimates that in 1981, management/technical office workers in the C-3 District who live in San Francisco represent about 24 percent of employed City residents and that management/technical and trade/customer service office workers combined represent about 31 percent of employed residents. While the two studies are not entirely comparable, this provides an indication of the trend.

/29/ Defined as jobs which had not previously existed in San Francisco, the number of new jobs from 1970 to 1980 exceeded the net increase in employment shown in Table IV.D.14. This occurred to the extent that there also were decreases in employment during this period. In other words, the net increase in employment for a given time period (as identified by reported employment statistics) represents the number of new jobs (or increases in employment) in San Francisco minus the decreases in previously existing jobs. For example, a net increase in

NOTES - Residence Patterns and Housing (Continued)

employment of 40,000 jobs would reflect both the increases in employment in some business (+70,000 new jobs) and the decreases in employment in other businesses (-30,000 existing jobs). Data on the number of new jobs alone are not available.

Regarding new jobs, it is also important to understand that a substantial amount of "new" employment can occur without the net addition of space. For example, new jobs can be created in some businesses while existing jobs decline in other businesses. Similarly, businesses moving into San Francisco provide new jobs in the City while other businesses with existing jobs move out of the City.

The net increase in employment shown in Table IV.D.14 also does not reflect the number of employment opportunities available from 1970 to 1980. The number of employment opportunities is determined by two factors. One is the turnover in existing jobs as employees retire, quit, or are fired. The other is the number of new jobs (increases in employment) excluding those new jobs where an existing employee is transferred into San Francisco. For example, businesses moving into San Francisco could also transfer their existing workforce so new jobs are created in San Francisco although there are no employment opportunities (at least not until turnover occurs). The net changes in employment do not identify either of these factors. On balance, the number of employment opportunities in San Francisco from 1970 to 1980 probably exceeded the net increase in employment.

/30/ Throughout this discussion, the term "residents" refers to those persons living in San Francisco. From the cumulative perspective of trends over time, "residents" relates to a changing group of individuals. Since people are continually moving in and out of San Francisco, the specific individuals who are residents changes over time (even if the number of residents does not change). In other words, "residents" refers to existing residents at various points in time recognizing that the individuals who are existing residents at a particular time are changing over the years.

For example, the 1980 Census reports that 73.3 percent of the City's 1980 population aged five years or older lived in San Francisco in 1975. Thus, 26.7 percent of residents five years and older in 1980 did not live in San Francisco in 1975. Further, it indicates that about one-quarter of the City's residents in 1975 no longer lived in San Francisco five years later (in 1980). More changes occurred over the ten years from 1970 to 1980.

/31/ The data presented in Table IV.D.13 are also measurements of the overall pattern from a cumulative perspective of net changes over time. For example, the decline in population in San Francisco from 1970 to 1980 does not indicate that 36,700 City residents moved out of San Francisco during that period. Rather, it indicates that the number of persons who moved out of San Francisco or died exceeded the number who moved in or were born, by 36,700. The actual number of persons

NOTES - Residence Patterns and Housing (Continued)

moving into or out of the City plus the number of births and deaths was much larger than 36,700. Similar reasoning applies to the other data shown in the table.

/32/ Relevant to trends in residence patterns, Table IV.D.14 presents two types of information. First, it shows how the average, overall pattern is changing. For example, it shows that while 89.1 percent of employed City residents worked in San Francisco in 1970, that percentage declined to 85.6 percent by 1980. Second, the table describes the change which is occurring in "marginal" terms. For example, it shows that for the 1970-1980 period, the increase in residents working in San Francisco as a percent of the overall increase in employed City residents was 39 percent. Since the 39 percent is lower than the 89.1 percent average in 1970, the overall average declined to 85.6 percent by 1980. Since the total number of jobs and of employed residents is large relative to the net changes which occur over time, the percentages of change "at the margin" can be very different from the average pattern. The average pattern changes very slowly over time.

The reader is reminded that the percentages which describe and compare net changes in two variables (such as the 39 percent figure) do not relate to any specific individuals. For example, the 39 percent does not indicate that 39 percent of newly employed San Franciscans were hired in San Francisco jobs. As described previously in the text the net change in employed San Franciscans does not identify the number of newly employed residents. The latter is a larger number.

/33/ Much confusion exists about the meaning of the ratio of the net change in residents working in San Francisco to the net change in San Francisco jobs (11 percent in the bottom row of Table IV.D.14). This percentage is only included in the text to describe the changing cumulative pattern. This percentage does not describe the share of new jobs held by residents. (See text discussion of the changes incorporated in the net increases used to derive this percentage, and see note 29.) Thus, it cannot be concluded that 11 percent of new jobs are held by City residents. The percentage does not apply to any specific jobs. It is only a mathematical ratio of the net changes which occurred over time for two different variables.

The data in Table IV.D.14 indicate that, on the average, about half, 50.7 percent, of all jobs in San Francisco (existing and new jobs) in 1980 were held by residents. The corresponding percentage was 57.4 percent in 1970. These are the percentages which should be used to describe the share of jobs (new and existing) held by residents at any particular time. This overall percentage declined from 1970 to 1980 (from 57.4 to 50.7). Although this percentage declined, it did not decline solely because the new jobs employed relatively fewer San Franciscans. As noted above and described in more detail later in the text, the percentage declined because (1) those newly employed (in existing and new jobs) had different household and housing characteristics from those whom they replaced or from all other workers in the

NOTES - Residence Patterns and Housing (Continued)

City; and (2) housing market factors resulted in changing residence patterns as existing and newly employed workers changed their place of residence (for a variety of demographic, lifestyle, financial, and employment reasons).

/34/ The Downtown EIR Employee Survey results indicate that the group of workers newly employed has different average characteristics from all workers in the C-3 District. The reason is that turnover is higher among certain types of jobs and among certain types of employees. For example, professional workers change jobs more often than managers, and younger workers change jobs more often than older workers. Over time, overall residence patterns change because of two reasons: those who are newly employed because of turnover are different from those whom they replace; and/or those who are newly employed because of job growth are different from all other workers. One cannot simply compare the characteristics of those newly employed in the last few years with those of all employees to identify if net changes in the overall pattern are occurring. These data do not identify who left, they only identify who was recently employed. Further, it is not possible to separate those newly employed because of turnover from those newly employed because of job growth.

It is possible to get indications of changes by making comparisons among groups with similar job and demographic characteristics (such as by comparing the residence patterns of younger, clerical workers in office jobs who were newly employed in the past three years with the residence patterns of those with similar characteristics who had worked downtown for a longer time). Analysis of the results of the Downtown EIR Employee Survey indicated, however, that it is difficult to control for all of the factors which affect residence patterns. Because of all the changes which are occurring, data about those newly employed are not substitutes for information about the actual changes in overall patterns over time. This information would only be available from similar surveys done at different times.

/35/ Analysis of the residence patterns of those who moved recently to provide an indication of changing overall residence patterns has many of the same problems described in note 34 for analysis of the newly employed. The main problem is that certain workers move more often than other workers. For example, renters move more often than owners, and, within each tenure group, stability seems to increase with age and income. Further, a survey of those who moved recently does not indicate if they differ from all those who had moved in a prior period since some of those individuals who had moved in the past would no longer work in the City.

Analysis of the C-3 District Employee Survey data, however, provided a useful indication of trends when tabulations were done separately by tenure and by other demographic characteristics. It was found that the residence patterns of those who had recently moved provided a better indication of changing residence patterns than did information for those newly employed.

NOTES - Residence Patterns and Housing (Continued)

/36/ This is not to say that the net growth of jobs and employees does not affect the changes in residence patterns of all those who would still work in the City if there was no job growth. Each group potentially influences the residence patterns of the other. Nevertheless, the number of changes among the existing jobs and existing workers is much larger than the changes which occur because of job growth.

/37/ See Section IV.C, Business And Employment Setting, p. IV.C.22 and note 14.

It should be noted that the 20 percent figure represents individuals newly employed in the C-3 District who had not previously worked there. It does not necessarily represent job opportunities in the C-3 District each year. Persons are newly employed in the C-3 District because of (1) turnover of employees in existing jobs, (2) the creation of new businesses, (3) increases in jobs in existing C-3 District businesses, and (4) the movement of business into the C-3 District. The jobs available in the C-3 District each year because other workers quit, are fired, or retire (first group above) and the jobs created by new businesses can be considered to represent job opportunities. However, the jobs of those workers in the other two categories do not necessarily represent job opportunities. The problem arises in the cases where businesses move into downtown San Francisco and bring existing employees with them and in situations where existing employers transfer jobs and/or employees into San Francisco from other locations outside the C-3 District. To the extent that these types of changes occur, workers who had previously not worked in the C-3 District become newly employed downtown, but their jobs did not provide employment opportunities for other labor force members.

/38/ In addition to the number of persons newly employed in the C-3 District each year, the survey also identified that about 27 percent of the workforce changes jobs each year. If 27 percent changes jobs and 20 percent are newly employed downtown, then about seven percent of the workforce change jobs within the C-3 District each year. This indicates that about 25 percent of those newly hired each year had previously worked for another employer in the C-3 District while about 75 percent of those newly hired did not previously work downtown.

/39/ The examples given here and in the previous paragraph are for the total City rather than only the C-3 District because employment growth figures are not available for the C-3 District from 1970 to 1980. Since the amount of employment growth in the C-3 District was probably larger relative to total employment in the C-3 District than was the case for the City overall, the changes due to growth would represent a larger percentage of all the changes which occurred in the C-3 District. However, the changes due to growth would still be less than the changes that would have occurred anyway. For example, if it is assumed that about 60 percent of the City's job growth occurred in the C-3 District, then employment growth in the C-3 District would have included about 50,000 jobs. If 20 percent of the workforce was newly employed each

NOTES - Residence Patterns and Housing (Continued)

year, then about 49,100 people were newly employed in the C-3 District including the 5,000 newly employed because of job growth. This would indicate that about 10 percent of those newly employed in the C-3 District each year were newly employed because of job growth. This 10 percent estimate is higher than the eight percent figure for the total City. Similarly for those who changed their place of residence each year, about eight percent could have been those who moved because they were newly employed because of job growth in the C-3 District. This eight percent figure is higher than the six percent estimate for the total City.

/40/ The Downtown EIR Employee Survey indicates that of those newly employed in the C-3 District who were not new to the region, about 30 to 40 percent had moved during the year that they were newly employed. The remaining 60 to 70 percent did not move during that time.

/41/ The housing information analyzed included: 1970 and 1980 Census data, annual building permit data through 1981, and housing forecasts prepared by the Association of Bay Area Governments (ABAG). Information was analyzed for each county within the region. A summary of relevant data is presented in Appendix I.

The east bay includes Alameda, Contra Costa, Solano, and Napa counties; the south bay includes San Mateo and Santa Clara counties; and the north bay includes Marin and Sonoma counties.

/42/ For example, the City's Residence Element indicates the potential for about 22,300 new housing units in mixed residential-commercial use areas including the Van Ness Corridor, north of Market, Downtown, south of Market, Rincon Hill, and Mission Bay. It indicates potential for another 4,500 units in two redevelopment areas, Yerba Buena Center and Rincon Point-South Beach. Overall, about one-half of the total housing opportunities identified in the Residence Element are in the eastern portions of the City. (See Environmental Impact Report, Residence Element of the Comprehensive Plan, 82.8E, certified April 21, 1983, p. A1.27.)

/43/ The basis for these housing estimates is provided in Appendix I. Appendix I primarily describes the addition of households. The addition of households is the same as an increase of occupied housing units. The growth of all housing units would be slightly higher to the extent of a vacancy factor. However, households could also increase if vacancies in the existing stock declined. Because the estimates developed here are order-of-magnitude figures, they would approximate the net addition of households or housing units.

/44/ The Downtown Plan identifies several areas for new housing near downtown. These proposals are not specific to the Downtown Plan but include projects from other plans and rezoning studies and are incorporated in the City's Residence Element. Housing in these areas, as well

NOTES - Residence Patterns and Housing (Continued)

as other potential housing identified in the Residence Element, are included in the citywide estimate of future housing development of an average of 1,000 units per year. These proposals are not assumed to be subject to the adoption of the Downtown Plan.

/45/ See Section IV.B, Land Use And Real Estate Development Impact, pp. IV.B.50-IV.B.52.

/46/ Of the 600 units forecast for the C-3 District, about 300 units are forecast to be built there without any changes in the C-3 District policies affecting housing development. Thus, about 300 units would be built in the C-3 District because of the changes in policy proposed in the Downtown Plan. Of these 300, about two-thirds (200 units) are estimated to represent net additions to the City's housing stock because of the C-3 District policy changes. About one-third (100 units) would be units which would substitute for other housing development. In other words, they would have been developed somewhere else in San Francisco if it were not for the proposed incentives in the Plan to build housing in the C-3 District.

/47/ C-3 District housing development from 1984 to 1990 (1,380 new units) is included in the citywide estimate of 1,000 units per year or 6,000 units from 1984 to 1990. The proposed housing policies of the Plan are not assumed to add to that total.

/48/ The forecasts of San Francisco residents employed in the C-3 District described in the text represent the most likely future scenario under the Downtown Plan. The general description of changes over time would apply under all likely scenarios. However, the specific numbers of residents employed downtown and the percentages they represent of total employment or of all employed residents could vary from those shown in Table IV.D.15. As described in Appendix I, the estimate of San Francisco residents employed in the C-3 District could vary by about 10 percent in either direction. Thus, the most likely estimate of 189,000 C-3 District workers residing in San Francisco in 2000 could range from about 169,000 to 209,000. However, the probability of either of these estimates occurring is lower than the probability of the most likely scenario presented herein.

As described previously, the forecasts of residence patterns under the Downtown Plan do not include the effects of the City's Office-Housing Production Program (OHPP). The OHPP is considered in the mitigation section of this EIR (see Section V.D.). For purposes of comparison, it is noted here that the application of the OHPP would result in a larger number of San Francisco residents working in the C-3 District. The percentage of C-3 District jobs held by residents would also be slightly higher. The number of C-3 District workers residing in other counties of the region would be lower with the OHPP than without it.

NOTES - Residence Patterns and Housing (Continued)

/49/ Changing residence patterns can only be forecast within the cumulative context of a significant amount of growth over time. The forecasts of residence patterns prepared for this study were prepared for the 1980's and the 1990's. Estimates for 1984 were developed to approximate about one-third of the change expected to occur from 1981 to 1990. It is for this reason that the text describes changes from 1981 to 1990 and 1990 to 2000.

/50/ This pattern is similar to past trends. As shown in Table IV.D.13, the number of City residents working in San Francisco increased from 1970 to 1980 although the percentage of San Francisco jobs held by residents declined. Although there are no data for the C-3 District in 1970, similar changes are likely to have occurred.

/51/ It is uncertain how this future trend compares with past trends. Table IV.D.13 shows that for the total City, the number of residents working in San Francisco increased although the share that those working in the City represent of all employed residents declined. Although there are no data to identify the trend for the C-3 District it is possible that the percentage of employed residents working in the C-3 District increased because of the relatively large growth of C-3 District jobs during the 1970's (see note 28). The future trend of an increasing share of employed residents working in the C-3 District will be primarily supported by greater additions of housing in the City in the next 20 years as compared to the past, and by the development of much of this new housing in locations accessible to downtown. All of the reasons behind this forecast are described in the text.

/52/ See Figure II.C.2 for a map of the City Study Areas.

/53/ The net changes summarized in Table IV.D.19 reflect the forecasts described previously. The rationale and important factors behind the forecasts are also described in earlier subsections. They are not repeated here. The methodology for developing the forecasts is described in Appendix I.

/54/ See the discussion of the cumulative perspective on changing residence patterns presented earlier in this impact section, particularly Figure IV.D.2 and associated text.

/55/ This percentage is often misinterpreted. See previous discussion at the top of p. IV.D.54 and note 33.

/56/ The percentages describing the share of jobs held by City residents (instead of those describing the share of residents working in the City) are often used for purposes of considering how San Franciscans benefit from local employment. This approach provides misleading conclusions. Two points should be noted. (Continued on next page.)

NOTES - Residence Patterns and Housing (Continued)

One is that because employment in San Francisco is larger than the working population of the City the percentage of jobs held by residents will always be lower than the percent of employed residents working in the City. Thus, a high percentage of residents working in the City could be obscured or overlooked by focusing attention on a lower percentage of jobs held by residents. Similarly, the growth of the labor force in San Francisco is likely to continue to be less than the growth of City jobs and less than the growth of the labor force in the rest of the region. Because of the differences in the magnitude of the numbers, increases in City residents working in San Francisco can compare more favorably to increases in the City's working population, while comparisons with job growth could indicate much lower percentages. These relationships are likely to continue to hold because of San Francisco's historic and ongoing role as a major employment center in the region.

Secondly, the mathematical relationships (as described by percentages) between variables (employment, employed residents, and residents working in the City) are not well understood. The percentage of jobs held by City residents could be higher when employment is lower, the number of City residents working in the City is lower and the percentage of employed residents working in the City is also lower. Employing fewer residents is not a benefit from an employment perspective. Thus, data which are not appropriate for a particular purpose can be used to provide misleading or inaccurate conclusions. For example, consider the following two hypothetical situations:

	Case A	Case B
City jobs	200,000	265,000
Employed residents	100,000	100,000
Residents working in the City	70,000	80,000
Percent of City jobs held by residents	35%	30%
Percent of residents working in the City	70%	80%

When considering how residents benefit from local employment, one might incorrectly focus on the percent of jobs held by residents and on that basis determine that Case A was the most desirable situation. However, in Case B, City jobs employ a larger number of City residents and a larger percentage of the City's working population. Case B would be correctly identified as the most desirable from the perspective of the local employment of City residents by focusing on the number and percent of residents working in the City (rather than on the percents of jobs held by residents).

NOTES - Residence Patterns and Housing (Continued)

/57/ These estimates were prepared by multiplying the existing number of households in 1980 by the estimated average ratio of employed persons per household (an indicator of labor force participation) from 1980 to 2000. This ratio is forecast to change over time. Separately, an estimate was prepared of the growth of employed residents because of the net increase in housing and households, assuming similar trends over time in employed persons per household. The forecast of employed San Francisco residents is the sum of these two estimates (see Table I.3 and the discussion in Appendix I). The increase in employed persons due to increasing labor force participation from the population assuming the existing housing stock is a larger share of the total (about 55 percent) than is the increase due to a net addition of households (about 45 percent).

/58/ Not all of the new housing units would be occupied by C-3 District workers. The majority could house C-3 District workers if much of the construction occurs in the eastern portion of the City (nearer the C-3 District).

/59/ Comparisons of citywide employment growth and housing growth indicate that there is likely to be a better "match" between these variables in the future than occurred in the past. From 1960 to 1970, employment increased by about 53,000 jobs while there was a small decline in housing (-157 units). From 1970 to 1980, employment increased by 84,500 and housing increased by 6,200. Over the 20 years from 1980 to 2000, citywide employment growth could be around 200,000 jobs while housing growth could be about 20,000 units.

It should be noted that because housing impacts were considered within the context of citywide employment and housing, the effects of secondary employment supported by C-3 District activity but located elsewhere in San Francisco have been incorporated in the conclusions reached.

/60/ As described previously and in Appendix I, future housing production in San Francisco could range from 600 to 1,500 units per year from 1981 to 2000. During 1982 and 1983, housing production was below the 1,000 unit per year average assumed in the forecasts in this EIR. If this lower level continued, there would be less growth of C-3 District workers residing in San Francisco than forecast in this EIR. There would also be more upward pressure on City housing prices and rents. It is also possible that more housing than 1,000 units per year could be built in the future. For example, the forecasts in this EIR do not include the effects of an office-housing production program in San Francisco. This program could result in more housing production than assumed here, in higher growth in the number of San Franciscans working in the C-3 District, and in less upward pressure on City housing prices and rents. A housing production program for office development is discussed as a mitigation measure in Section V.D.

/61/ A major section in Appendix I describes the relationship between job growth and housing markets and provides the theoretical basis for the discussion in this impact section.

NOTES - Residence Patterns and Housing (Continued)

/62/ It is not always the case that as housing prices/rents increase, those who move out first or who decide not to move in are those with the least resources. In fact, those who move out or do not move in often include proportionally more of the middle income groups. Proportionally more of the higher and lower income groups would tend to remain in San Francisco. There are many reasons for this situation, including housing preferences and the characteristics of San Francisco's neighborhoods and housing stock. For example, the C-3 District Employee Survey shows that proportionally more of the lower income worker households reside in San Francisco and that rents paid for City housing by these households are lower (in absolute dollar terms) than rents paid by the households residing in other parts of the region. This situation exists partly because San Francisco has a large stock of older housing, and established neighborhoods that are preferred by certain households. Thus, the housing impacts which arise in a competitive housing market must be carefully considered for all of the groups involved. For example, it may be that paying higher rents for lower quality housing and paying high rents relative to incomes are the more important housing impacts for lower income groups rather than the displacement of households which is often raised in relation to lower income groups.

E. TRANSPORTATION AND CIRCULATION

INTRODUCTION

San Francisco's C-3 District is the hub of the regional transportation network. Public transit services directly link the C-3 District with residential and commercial centers in seven of the nine Bay Area counties (Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Sonoma Counties). Napa and Solano Counties, although lacking direct transit service to the C-3 District, are linked to the C-3 District by the regional freeway and bridge system that provides vehicular access to all nine Bay Area counties.

The C-3 District attracts travel from the entire region. Residence locations for C-3 District employees (shown in Table IV.D.1, p. IV.D.3) illustrate the regional characteristics of commute travel to and from the C-3 District. Over 40% of the daily C-3 District employee work travel is made to and from locations outside San Francisco. In addition to employee travel, the C-3 District attracts travel to retail areas, to business offices and services, and to hotels and residences. Service and delivery vehicles operate throughout the C-3 District each day. Persons traveling to and from other locations in San Francisco, the East Bay, the North Bay and the southern Peninsula share the regional transportation network with C-3 District travelers.

Because C-3 District users share the transportation network with persons travelling to and from other (non-C-3) destinations, the process of analyzing the transportation impacts of development in the C-3 District is necessarily complex. To provide an adequate analytical basis, a travel demand model has been developed that utilizes information specific to the C-3 District and data concerning regional travel growth to make projections of total demand on the transportation network serving the C-3 District. The travel demand model is unique and differs from the analytical techniques used in other projections of transportation demand for EIR analysis.

For each of the target years (1984, 1990 and 2000), the entire (existing and future) components of travel from the C-3 District have been simulated by the model. By modelling the C-3 District travel demand, the analytical process differs from project-level EIR analysis where an increment of travel is added to existing (measured) travel. (Appendix J, p. J.2 contains discussion of the differences in methodology.) The travel demand process (see Appendix J, pp. J.2-J.25) projects three travel components - C-3 District employee home-based work travel, travel other than home-based employee travel to all uses in the C-3 District, and non-C-3 District travel on the transportation network serving the C-3 District. The C-3 District travel (both work and other) has been projected by the travel demand model on the basis of C-3 District employment. The regional distribution and the modal split (use of transportation modes) of C-3 District travel has been assumed to change over time to reflect the dynamic nature of travel habits of Bay Area residents. Non-C-3 District travel is defined to mean travel without an origin or a destination in the C-3 District that shares the transportation network with travel to and from the C-3 District. Non-C-3 travel has been projected for the target years through the use of growth factors developed on the basis of historical trends.

The design of the travel demand model necessitates the use of a calibration process to ensure that the model results are valid. The calibration process compares model results (estimates of travel) to actual (measured) values and adjusts the model until the estimated values approximate the actual values. Hence, the calibration process needs a data base of actual travel volumes. Because of the point in time that a vital portion of the travel data was collected (the Employer/Employee Surveys; see Appendix F), the calibration process has used 1981/82 as the baseline conditions for which the model results were validated even though 1984 is the Setting year.

The travel demand process has modelled three travel components (C-3 work, C-3 other, and Non-C-3) over time for the years 1984, 1990 and 2000. Each component of the modelled travel behaves in a unique manner independent of the others. Thus, because the travel demand process has estimated total future travel, not just travel from the C-3 District, this section contains a comprehensive analysis of cumulative impacts to the transportation network serving San Francisco. (See Section IV.B for further discussion of cumulative development.)

The p.m. peak hour (4:30 p.m. to 5:30 p.m.) was chosen as the primary analysis period. Travel during this hour on weekdays reaches maximum levels on all transportation modes serving the C-3 District, and particularly on the San Francisco systems. Parallel to the analysis of the p.m. peak hour, a secondary analysis was made of travel during the p.m. peak period (4:00 p.m. to 6:00 p.m.). Appendix J contains a complete discussion of the process and the methodology used to calculate peak-hour and peak-period travel.

Peak-hour and peak-period travel is dominated by commute (work) trips, whereas daily travel for the C-3 District is generally much more local in nature and is predominantly pedestrian. Although the a.m. peak period may have as many work-related trips, a greater proportion of non-work trips occur in the p.m. peak period. The p.m. peak period travel from the C-3 District represents the most concentrated level of travel for the C-3 District and most of the transportation network serving San Francisco. A.M. peak traffic conditions at the regional screenlines have the effect of metering the amount of traffic that reaches the C-3 District from outside of the City. P.M. conditions are usually most severe on both freeways and streets within San Francisco, whereas a.m. peak conditions are most severe at locations outside of the City.

An important point to be remembered when analyzing the information in this section is that the travel demand analysis has modelled an average weekday. Because of seasonal and daily variation in travel patterns, conditions may occasionally be better or worse than described. The variation in conditions is not caused by a fault in the model; rather, variations in individual numbers should be regarded as normally occurring fluctuations. Because the data base has been made from averages of many observations, a single observation may be higher or lower than the data reported in this section.

SETTING

Travel Demand Analysis

The amount of travel generated by the C-3 District in the Setting year, 1984, has been estimated through a travel demand analysis. The travel demand process has three basic components - trip generatiion, trip distribution and trip assignment. Appendix J contains a complete description of the travel demand analysis methodology. Prior to generating the travel for 1984, the travel demand analysis was calibrated using data for 1981/82. To facilitate the trip assignment process, a survey of C-3 District employees was conducted to obtain, among other data, employee travel patterns (transportation modes used and times of travel). Appendix F describes the employee survey.

Trip generation is generally based on indicators or predictors of travel, such as type of business activity, size of development, or employment. Trip generation rates are designed to permit estimation of total trips to and from specific sites (e.g., an office building) including employee work trips, employee trips other than work (such as lunch hour trips), service or maintenance personnel trips, deliveries, and visitors' trips. The existing and projected C-3 District employment has been used as the basis for predicting the trip generation (the trip generation rates used in this analysis are shown in Appendix J, Table J.1). This is different than the "Land Use" method of analysis used in project EIR analysis. Because of the procedure used to forecast employment (see Section IV.C), the basis of the transportation analysis is also different from the "Employment Trend" method of analysis developed to estimate downtown travel demands. Appendix J contains discussion of the differences in methodologies on p. J.3.

In 1981/82, there were about 270,000 employees in the C-3 District (see Section IV.C) including about 5,200 building maintenance employees and 7,300 construction employees. Because the trip generation rates calculate total travel to a site, the travel from building maintenance and security employees is included in the trip generation rates for the employees in the other business activity groups. Thus, building maintenance and security employees have been excluded from the total C-3 District employment to avoid double-counting in the trip generation process. Total daily travel generated by the C-3 District on an average weekday in 1981/82 was 2,242,000 person trip-ends (pte). In 1981/82, p.m. peak-period travel represented about 12% (267,400 pte) of the daily total. About seven percent (163,800 pte) of the daily total (about 60% of the peak-period) travel occurred during the p.m. peak hour.

The peak-hour and peak-period travel from the C-3 District was assigned to modes on the basis of modal split percentages developed from the Employee Survey (see Appendix F and Appendix J) for employee travel and from a survey of business visitors and retail customers for other travel./1/ The peak-hour and peak-period travel by mode for the C-3 District for 1981/82 (as shown in Table IV.E.1, p. IV.E.25) has about 60% transit use for work-related travel while non-work travel is predominantly (75%) walk trips.

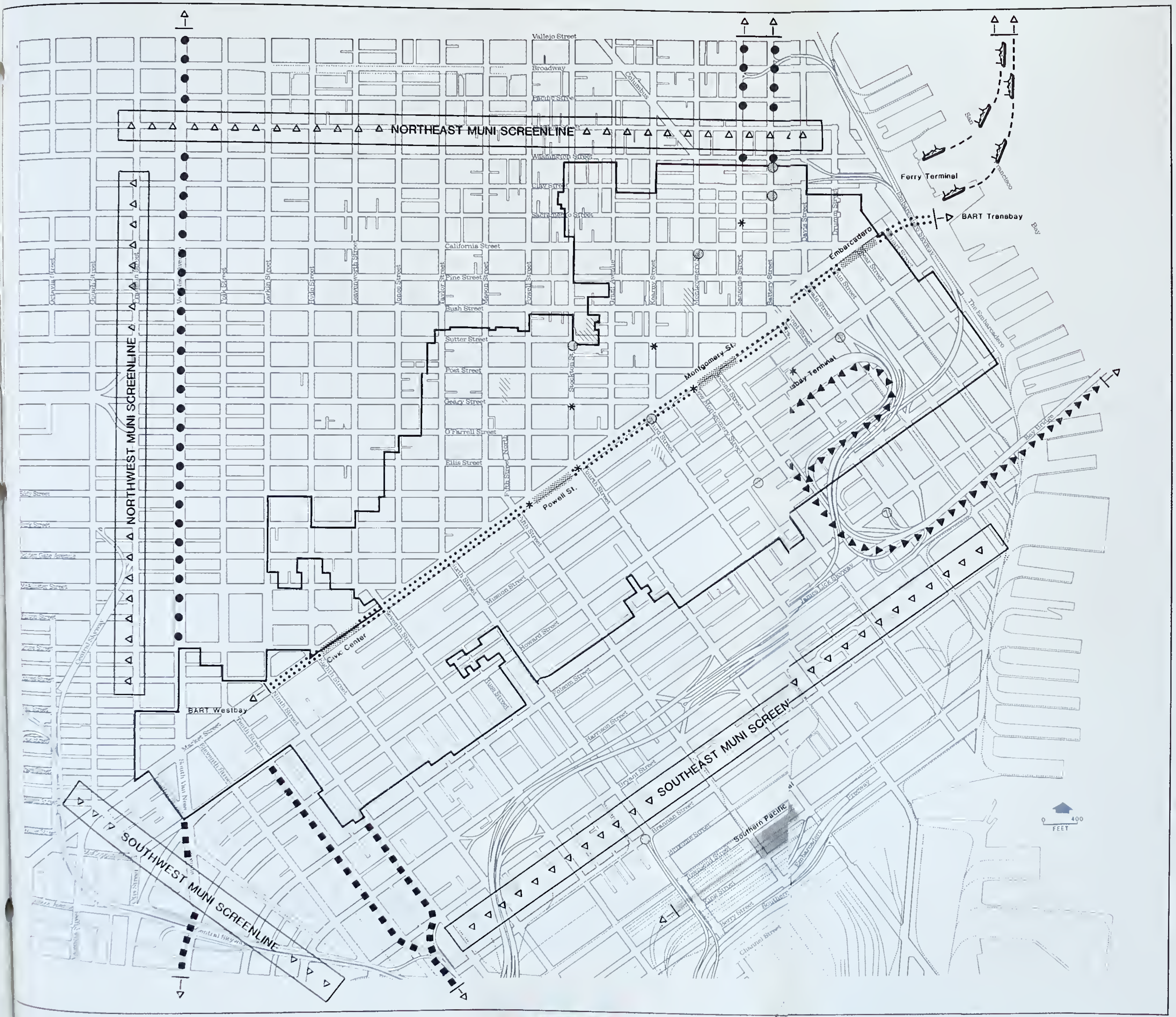
The total permanent employment for the C-3 District in 1984 is forecast to be 280,900 (see Section IV.C). Of this total, 5,800 employees would be classified as building maintenance and security. As explained above, these employees have been excluded from the trip generation process. The total 1984 C-3 District employment for the purpose of trip generation would therefore be 275,100. Daily travel from the C-3 District in 1984 is estimated to be 2,428,000 pte; an increase of eight percent from 1981/82.

The p.m. peak period travel from the C-3 District in 1984 would be about 291,200 pte, of which, about 174,200 pte would occur during the peak hour. Travel from the C-3 District in 1984 would increase about nine percent over the 1981/82 peak-period travel, and about six percent over the 1981/82 peak-hour travel. The variation in the peak-hour and peak-period travel growth is the result of a change in the mix of land use activities in the C-3 District. No assumptions regarding the future use of flex-time or staggered working hours have been used to shift travel from the peak hour into the peak period.

The 1984 modal split is assumed to be unchanged from the 1981/82 modal split, with the exception of a minor shift from single occupant auto use to transit and ridesharing (see Appendix J, Table J.5). The shift between modes may be seen in Table IV.E.1. The percent change from 1981 to 1984 for commute Drive Alone travel is about half the total change for work trips. The 1984 modal split for work-related travel in the p.m. peak period and the p.m. peak hour would continue to have about 60% of the travel on transit, while the non-work travel would continue to be about 75% primary pedestrian travel (i.e., trips that would by made entirely on foot). About four percent of the total C-3 District p.m. peak-hour work-related travel would be home-based walk trips (i.e., persons walking to or from home), about 75% of the non-work travel would be non-home-based walk trips (i.e., persons walking to destinations other than home such as stores, restaurants, etc.).

Transit

Local and regional transit agencies provide public transportation service to the C-3 District. Figure IV.E.1 shows the locations of terminals and describes the transit routes serving the C-3 District. The San Francisco Municipal Railway (Muni) provides motor coach, trolley coach and light rail transit service within San Francisco. The Bay Area Rapid Transit District (BART) provides commuter rail service to four C-3 District stations in the Market Street Subway from San Francisco, Alameda and Contra Costa Counties. BART's western terminus in Daly City provides limited service to San Mateo County. The Alameda-Contra Costa Transit District (AC) provides transbay motor coach service to the East Bay from a terminal at First and Mission Streets. The San Mateo County Transit District (SamTrans) provides commuter motor coach service from San Mateo County. The Golden Gate Bridge, Highway and Transportation District (GGT) operates motor coach, ferry, subscription bus, and ridesharing (vanpool) services to and from Marin and Sonoma Counties. Independently owned and operated jitneys provide service on Mission Street.



LEGEND

— C-3 DISTRICT BOUNDARY

TRANSIT SCREENLINE

▶▶▶ A.C. TRANSIT
(Screenline at Bay Bridge Toll Plaza)

:::: BAY AREA RAPID TRANSIT
▨ BART Station

● ● GOLDEN GATE TRANSIT
(Screenline at Golden Gate Bridge Toll Plaza)

FERRY
TIBURON (Harbor Carriers)
SAUSALITO (Golden Gate Transit)
LARKSPUR (Golden Gate Transit)

■■■ SAMTRANS
(Screenline at San Francisco/San Mateo County Line)

SOUTHERN PACIFIC RAILWAY (CalTrans)

△ △ MUNI SCREENLINE
Northwest Screenline - (See Figure IV.E.2)
ROUTES: 1, 1AX, 1BX, 2, 4, 5, 21, 31, 31AX, 31BX, 38, 38L, 38AX, 38BX
Northeast Screenline -
ROUTES: 3, 15, 19, 25, 30, 30X, 30AX, 30BX, 32, 41TC, 42, 45, 59, 60
Southeast Screenline -
ROUTES: 15, 19, 25, 27, 30X, 30AX, 30BX, 40MC, 47
Southwest Screenline -
ROUTES: 6, 7, 8, 9, 11, 12, 14, 14GL, 14X, 16X, 17X, 26, 66L, 71, 72X, J, K, L, M, N

NOTE: The Muni routes shown are those in effect at the time of the data collection. Muni routes are continually subject to change, some route changes have been implemented since the data were collected.

SPECIAL STUDY LOCATIONS

○ Intersection Study

* Pedestrian Study

▨ Parking Study

FIGURE IV.E.1:
C-3 DISTRICT SCREENLINES AND SPECIAL STUDY LOCATIONS

SOURCE: Environmental Science Associates, Inc

Two transportation terminals serving the C-3 District are located outside its boundaries. The Ferry Building at the east end of Market Street (see Figure IV.E.1) is a terminal for ferry service for Marin County provided by Golden Gate Transit (to Larkspur and Sausalito) and Harbor Carriers (to Tiburon). The Ferry Building is adjacent to the C-3 District eastern boundary. Commuter rail service to the southern Peninsula (CalTrain) operates from a station at Fourth and Townsend Streets. The station is approximately one-half mile from the southern boundary (Folsom Street) of the C-3 District (see Figure IV.E.1). The Southern Pacific Railroad operates service for the California Department of Transportation (CalTrans). Both terminals are connected to the C-3 District by Muni routes.

The transit agencies serving the C-3 District carry approximately 60% of the peak-period employee work travel as well as about 20% of the peak-period other travel. P.M. peak-hour and peak-period loadings on the local and regional transit routes were near capacity for some of the routes in 1981/82 (see Table IV.E.2, p. IV.E.29). The values shown in Table IV.E.2 are sums over the peak hour and the two-hour peak period. Within the peak hour, there are periods of time when the loading ratios would be higher than for the hour (peak-of-the-peak conditions). Individual transit vehicle loadings vary on a day to day basis because of fluctuations in ridership (demand) and because of variations in operating conditions caused by traffic congestion, equipment availability, or system breakdowns. Photographic examples of p.m. peak-hour loadings on Muni vehicles are shown in Appendix J, Figure J.4, pp. J.31-J.33. Further descriptions of operating conditions on individual transit routes serving the C-3 District are contained in periodic reviews in the San Francisco Examiner in which "The Phantom Commuter" rides and rates transit service./2/

The level of service concept, similar to that developed for highway operations, has been applied to both bus transit and rail transit. Passengers per seat (i.e., total passengers divided by the number of seats) has been used as the measure of effectiveness to define the various level of service ranges. Appendix J, Table J.10, p. J.36, shows the relationship between Level of Service and passengers per seat ratios for bus transit systems. Parallel to the scale for bus transit is a scale for rail transit./3/

During the p.m. peak hour in 1981/82, all of the transit agencies were operating in Level of Service D or better with the exception of BART Transbay and Muni in the Southwest corridor where operations were in Level of Service E. Although BART is a rail transit service, its cars have a unique seating configuration. The ratio of total capacity to seated capacity for a BART car (about 1.5) is equivalent to the ratio for bus transit and, thus the bus transit Level of Service scale is applicable to BART. The rail transit Level of Service scale is based on typical light rail transit systems where total capacity is about 2.0 to 2.2 times seated capacity. The rail transit Level of Service scale would be applicable to Muni Metro. In 1981/82, Metro service in the peak-period operated at 1.48 passengers per seat, which is Level of Service C for rail transit systems; peak-hour Metro operations in 1981/82 were in Level of Service D (1.63 passengers per seat). Muni Metro provides about 50% of the seated capacity to the Southwest. Because Metro vehicles can accommodate higher loadings (2.0 passengers per seat) than buses or trolleys (1.5 passengers per seat), the Level of Service would be somewhat better than shown in Table IV.E.2. An exact estimate of Metro loadings is not possible without analysis of the Metro service separate from the remainder of Muni service to the Southwest; such analysis would be beyond the ability of the travel demand analysis to accurately predict over time.

With regard to the Muni data presented in Table IV.E.2, the Muni routes have been aggregated on a corridor basis and thus include two directional travel on some routes that serve the Northeast and Southeast corridors. The Muni numbers cannot be added over the corridors to get a total for the system. Neither can capacity be shifted from one corridor to another. For instance, capacity in the Northeast corridor depends, in large part, on capacity that serves the Southeast portion of the City. The 15, 19, 25, 30, 30X, 30AX, 30BX, 32, 41, 42, and 47 lines pass through the Downtown in two directions. Service on the above lines is interdependent. Thus, increases or decreases in capacity on one of the above lines directly affects service in the opposite direction. Service to the Northeast and Northwest corridors are also interconnected as lines serving the Northwest must pass through the Northeast corridor and, thus serve both areas. Muni ridership and capacity have been apportioned between both areas.

Passengers per seat ratios are only one measure of adequacy of service. The obvious constraints of operating on heavily used streets in and around the C-3 District causes transit vehicle bunching, loss of running time and lack of schedule adherence which inevitabily reduces service, reliability, and ultimately capacity. In some respects this would not be evident from simple quantitative analysis. In addition to these inherent structural inefficiencies there are other factors which would affect overall transit capacities. They include extreme variability in daily and seasonal ridership for which absolute capacity must be available, as well as, transit riders who remain uncounted because their transit trips both start and end beyond the screenlines used in this analysis. Daily fluctuations in fleet availability also affect system capacity.

Further, policy considerations dictate operating conditions on certain lines where minimum headways have been established to maintain transit access to areas that is not warranted on the basis of ridership alone. When averaged together these figures may slightly distort overall ridership conditions.

P.M. peak-period conditions on transit in 1981/82 were equivalent to or better than peak-hour conditions. In some cases, where demand remains at peak-hour levels during the two-hour period, the passengers per seat ratios in the two-hour period are higher than in the one-hour period. This anomaly is the result of transit agencies providing express (or additional) service during the peak hour but not during the entire peak period. An example of this type of operation may be seen on BART, where three extra trains operate transbay in the peak hour but not in the rest of the peak period. Another factor involved is the distribution of demand (ridership) over the peak-period. The Employee Survey shows the C-3 employees demand for Muni and BART (and most of the transit agencies) is spread throughout the peak period at uniformly high levels.

Because of employment growth in the C-3 District, transit demand from the C-3 District has been projected to increase between 1981/82 and 1984 (see Table IV.E.1). Overall increases in demand (including non-C-3 travel) on the transit agencies are as high as 14% during the peak hour and 11% during the peak period (see Table IV.E.2). Transit capacities in 1984 have been assumed to be equivalent to 1981/82 capacities (see Appendix J, p. J.25). Peak-hour Levels of Service would be worse in 1984 than in 1981/82. Muni service to the Northwest would drop from Level of Service D to E, Muni service to the Southeast would drop from C to D, and BART Transbay would drop from E to F. "Crush" or "jammed" loadings on BART are in the range of 1.5 to 1.8 times seated capacity. Because BART operates on a centrally-controlled system, the "crush" loadings would not increase passenger loading times (which causes deterioration of service) as would be the case on a bus transit system; rather, the effects of "crush" loadings on BART would be reflected in increased levels of passenger discomfort.

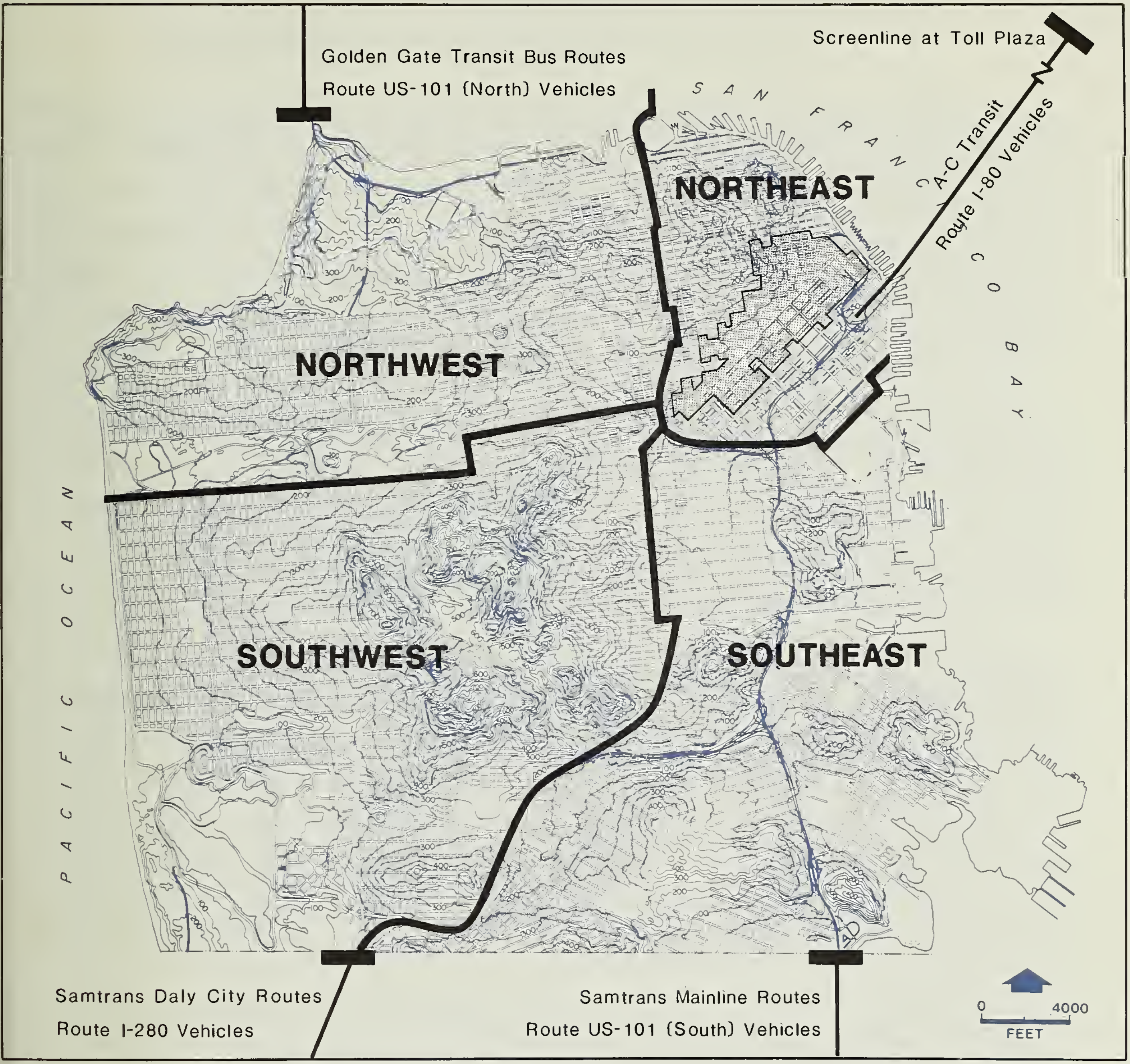
Peak-period operating conditions would also change between 1981/82 and 1984 although not as much as during the peak hour. Muni service to the Northeast would drop from Level of Service C to D and Muni service to the Southwest would approach the upper limit of Level of Service E. BART Transbay would drop from Level of Service E to F in the peak period.

Peak-hour and peak-period transit demand would be served by existing transit systems in 1984, although operating conditions would be worse than in 1981/82. Transit passengers in 1984 would be expected to encounter increased periods of crowding on individual transit vehicles. Peak-of-the-peak loadings would be expected to expand over longer time periods.

Traffic

The Downtown area, including the C-3 District, is served by four major multi-lane freeways. Interstate I-80 via the San Francisco-Oakland Bay Bridge provides access to the East Bay; US-101 via the Golden Gate Bridge provides access to the North Bay; and US-101 and Interstate 280 provide access to the Southern Peninsula. Figure IV.E.2 shows the regional screenlines. California State Route (SR-)480, the Embarcadero Freeway, serves the C-3 District and the Northeast portion of San Francisco as a distribution structure for traffic on I-80 and US-101. SR-480 provides the only direct freeway ramp connections with the C-3 District. Freeway ramps connecting with I-80, US-101 and I-280 are located south of the C-3 District and are accessible from local streets. Access to US-101 to the north is only available from local streets (see Figure IV.E.1). Regional traffic access to the north and to the east is limited to the Golden Gate Bridge (US-101) and the Bay Bridge (I-80), respectively. Regional access to the south is provided by local streets, US-101 and I-280.

The analysis of traffic impacts has been conducted on two levels; one level of analysis considered impacts at the regional screenlines (see Figure IV.E.2), the second level of analysis considered impacts at intersections in and near the C-3 District. The travel demand process has been used to determine the vehicular traffic component of C-3 District travel. As shown in Table IV.E.1, three of the transportation modes are Drive Alone, Carpool, and Vanpool. The modal split has been used to assign person trip-ends (pte) to the vehicular modes. Vehicle trip-ends (vte) have been calculated by applying estimates of vehicle occupancy (persons per vehicle including the driver) developed from Employee Survey data. The occupancy factors developed were 1.0 persons per vehicle for Drive Alone, 2.7 persons per vehicle for Carpool, and 12.0 persons per vehicle for Vanpool. Dividing the number of pte in each of the three modes by the occupancy factor for the respective modes results in a calculation of the number of equivalent vte. The overall vehicle occupancy for both work and other trips for 1981/82 was 1.41 persons per vehicle. The 1983 Cordon Count found an overall vehicle occupancy of 1.40 persons per vehicle in the downtown area./4/



▬ SCREENLINE

▨ PRIMARY STUDY AREA: See FIGURE II.1

MUNI SCREENLINES

Northwest Screenline -
ROUTES: 1, 1AX, 1BX, 2, 4, 5, 21, 31, 31AX, 31BX, 38, 38L, 38AX, 38BX
Northeast Screenline -
ROUTES: 3, 15, 19, 25, 30, 30X, 30AX, 30BX, 32, 41TC, 42, 45, 59, 60
Southeast Screenline -
ROUTES: 15, 19, 25, 27, 30X, 30AX, 30BX, 40MC, 47
Southwest Screenline -
ROUTES: 6, 7, 8, 9, 11, 12, 14, 14GL, 14X, 16X, 17X, 26, 66L, 71, 72X, J, K, L, M, N

NOTE: The Muni routes shown are those in effect at the time of the data collection. Muni routes are continually subject to change, some route changes have been implemented since the data were collected.

FIGURE IV.E.2:
SAN FRANCISCO TRANSPORTATION STUDY AREAS AND REGIONAL SCREENLINES

SOURCE: Environmental Science Associates, Inc.

Assignment of C-3 District vehicle travel to regional corridors has been made on the basis of residence locations for employee travel and on the basis of respective origins and destinations for other travel. For C-3 District travel within the downtown area, the assignment of the vehicular traffic to streets was made on the basis of the employment in each Subarea (see Figure II.1 for Subarea boundaries). Although the parking supply in each Subarea is a contributing factor to vehicle assignment, the number of drivers parking in one Subarea destined to another Subarea tend to balance throughout the C-3 District.

In addition to vehicular travel from the C-3 District, the component of traffic from other areas of San Francisco and from outside the City on each of the regional facilities was identified for the 1981/82 conditions and projected for the future (1990, 2000) conditions. Appendix J, contains discussion of the process used to develop the estimates of non-C-3 District vehicular travel on local and regional facilities.

Included within the vehicular traffic component are employee travel and other travel from business visitors, retail customers, transit vehicles, service and delivery vehicles, and construction-related vehicles. Since construction sites would be located at various points throughout the C-3 District and would be expected to shift between 1984 and 2000, the non-peak impacts are expected to be diverse. There would be temporary and limited impacts on local intersections from construction worker and truck traffic, usually during off-peak hours. Construction activities could temporarily disrupt traffic and pedestrian flows at various locations through lane closures, sidewalk closures, and street excavation.

Analysis of traffic conditions at the regional screenlines (see Figure IV.E.2) has been conducted for both the p.m. peak hour and the two-hour p.m. peak period. A.M. peak traffic conditions at the regional screenlines have the effect of metering the amount of traffic that reaches the C-3 District from outside of the City. This analysis has considered p.m. peak conditions. P.M. conditions are usually most severe on both freeways and streets within San Francisco, whereas a.m. peak conditions are most severe at locations outside of the City. The conclusions reached regarding excess auto demand in the p.m. peak period would be mirrored in the a.m. peak to a lesser extent.

Traffic demand at the regional screenlines in 1981/82 (see Table IV.E.3, p. IV.E.35) during the p.m. peak hour used between 90% and 100% of the available capacity on the freeways and bridges. Although the capacity of the Bay Bridge is calculated to be 9,000 vehicles per hour (vph), the one-hour demand shown in Table IV.E.3 represents the effective capacity. During high volume periods, traffic flow approaching the Bay Bridge is sensitive to the concentration of merging vehicles and occasional interruptions caused by stalled vehicles and/or accidents. When slowdowns on the Bridge occur, flow conditions on the freeways and feeder streets or on the approaches rapidly deteriorate. Even though the incidents that cause the slowdowns on the Bridge are temporary and are quickly cleared, the time required for conditions to return to normal at the approaches to the Bridge may extend beyond the peak hour. The demand figures shown in Table IV.E.2 for the one-hour and two-hour periods are averages of several days and, thus values for individual days may be different than the average. Excess demand in the peak hour has been calculated using the peak-hour demand figure in Table IV.E.2 as a base.

US-101 and I-280 meet at a freeway-to-freeway interchange located between the downtown and the county line. Both of the freeways upstream of (preceding) the interchange have capacity conditions that are slightly different than at the county line. Because of geometric configurations in the interchange area, the effective lane capacities of the two freeways is 1,800 vehicles per hour per lane rather than 2,000 vehicles per hour per lane at the County Line. Thus, the one-hour capacity of each facility would be 7,200 vph. Although this interchange is the major capacity restraint for the freeway system inside San Francisco, conditions have been analyzed at the county line because of the abundance of surface routes that allow traffic from the downtown to bypass the US-101/I-280 interchange. The number of parallel surface routes available to downtown traffic diminishes substantially by the time the freeways cross the County Line. The downtown traffic destined for Peninsula locations that has by-passed the interchange has been assumed to have re-entered the freeways between the interchange and the County Line.

Peak-hour freeway operating conditions were generally in Level of Service D to E conditions which would indicate unstable flows in the 35 mph to 45 mph range. Appendix J, Table J.9, shows the Level of Service for freeway operations. Peak-of-the-peak conditions within the peak hour would be expected to be worse than the hourly conditions because of surges in demand during the peak hour. The Employee Survey analysis showed a tendency for C-3 District employee-based auto travel to be clustered around a single half-hour period within the peak hour. Conditions during the peak-period at the screenlines would be similar to those experienced during the peak-hour. During the peak-period, C-3 District traffic represents a lesser proportion (about 30%) of the total traffic volumes at the regional screenlines than during the peak hour (when it is about 50%).

Peak-period volumes on the Bay Bridge and the Golden Gate Bridge are more than twice the peak-hour volumes. This anomaly most likely is the result of the effects of temporary flow interruptions during high demand periods. As explained above, the ability of vehicles to enter the Bay Bridge is affected by operating conditions on the Bridge. The Golden Gate Bridge operates under similar conditions but is also affected by congestion on the surface streets that form the approaches to the Bridge (Lombard Street, Doyle Drive). During the higher demand periods (i.e., the peak hour), temporary flow interruptions have a substantially greater effect on the total volume of traffic crossing the bridges. The peak-period flows tend to be more uniform both because of a declining demand on the shoulders of the peak and because of the spreading over time of the peak-hour (caused by congestion on the bridges). The net effect of the above factors is that the peak hour may occur slightly earlier or later than 4:30 p.m. to 5:30 p.m. on a particular facility; peak outbound demand from the C-3 District is concentrated in that hour.

Ten intersections in and near the C-3 District (see Figure IV.E.1 and Figure IV.E.3, p. IV.E.38) were selected for peak-hour traffic analyses to provide a basis of comparison for conditions expected in future years. These intersections were selected through discussions with the Department of City Planning and the Traffic Division of the Bureau of Engineering of the Department of Public Works./5/

The intersections selected are either key intersections near freeway ramps serving the C-3 District or key intersections in the C-3 District that function as indicators of peak-hour traffic conditions. Most of the intersections were operating at Level of Service D or better during the p.m. peak hour (see Table IV.E.5, p. IV.E.37). Appendix J, Table J.8, p. J.34, shows Levels of Service for intersections. The intersections of Brannan and Sixth Streets and First and Harrison Streets were operating at Level of Service F (jammed conditions) during the p.m. peak hour in 1981/82. Because of the location of the Brannan and Sixth Streets intersection with respect to the I-280 southbound on-ramp, literally all of the southbound traffic on the I-280 extension has to pass through the intersection. Similarly, the intersection of First and Harrison Streets is the eastern most surface on-ramp to the Bay Bridge and is subject to substantial congestion at the merge with the on-ramp from First and Essex Streets. Queues of vehicles are present on the approaches to both the First Street and Sixth Street ramps throughout the peak period. The intersection of First and Mission Streets was operating in Level of Service E during the p.m. peak hour in 1981/82. Traffic conditions at this intersection could generally be described as poor with vehicles delayed up to several cycles of the traffic signals during the peak hour.

Traffic conditions both on the freeways and on the surface streets in 1984 would be expected to be similar to existing (1981/82) conditions. Increased use of transit (about one percent greater than in 1981/82) and ridesharing (about five percent greater than in 1981/82) by C-3 employees in the East Bay corridor would moderate the increase on the Bay Bridge during the peak hour (see Table IV.E.3). Traffic volumes would be expected to increase on the Golden Gate Bridge and on the freeways to the south. Because of the lack of incentives for Peninsula drivers to shift (i.e., limited transit availability, no carpool lanes) and the relatively high level of roadway and freeway access, little shift to transit or ridesharing could be anticipated in that corridor by 1984. P.M. peak-period demand at the regional screenlines (with the exception of the Bay Bridge) would increase by between two percent and four percent during the period from 1981/82 to 1984. The increased travel would be expected to worsen the operating conditions slightly. Overall operations would be in Level of Service D to E conditions similar to those experienced during the peak period in 1981/82.

Traffic operations at the 10 intersections would be expected to deteriorate between 1981/82 and 1984 because of the increase in the number of autos in the downtown (see Table IV.E.4 and Figure IV.E.3). During the p.m. peak hour, two intersections (Mission and Beale Streets and Mission and First Streets) would operate in Level of Service E conditions. The intersections of Brannan and Sixth Streets and First and Harrison Streets would continue to have Level of Service F conditions during the p.m. peak hour. Operations at Levels of Service E and F represent unacceptable delay to motorists. Motorists confronted with increased waits on surface streets would alter their travel patterns to use less congested routes (to the freeway ramps) or to travel at different times (to avoid periods of traffic congestion).

Muni operations would be adversely affected by increased congestion. Figure IV.E.3 shows areas of traffic congestion expected during the p.m. peak period related to the intersection analysis. Operation of Muni surface transit routes through the congested areas would be impeded; this would lead to decreased levels of Muni service since scheduled headways would not be met. From the intersection analysis, it appears that transit operation on First, Mission, Stockton and Sutter Streets (all of which are designated as transit preferential streets in the Master Plan) would be constrained./6/ Mitigation measures have been developed that address the operational impacts on transit (see Section V.E, Mitigation).

Parking

Parking within the C-3 District is provided by a variety of off-street facilities, both public and private, as well as by metered and signed on-street parking spaces. Additionally, there are considerable amounts of parking in areas adjacent to the C-3 District. The number of off-street parking spaces in each Subarea was determined from an inventory conducted by the Department of City Planning./7/ In 1981/82, the total number of off-street parking spaces including commercial, private, government and hotel parking was approximately 38,800 spaces. Data from the Department of Public Works indicates that there is a total of approximately 2,500 on-street spaces in the C-3 District./8/ The total C-3 District parking is approximately 41,300 parking spaces. There are a total of 7,800 on-street and off-street spaces located South of Market./9/ Fifty percent of these (or 3,900) are easily accessible to the C-3 District. Other parking available to the C-3 District includes about 1,800 spaces in the Civic Center area, which borders the C-3 District on the west. Thus a grand total of 47,000 parking spaces were in or adjacent to the C-3 District in 1981/82.

The parking analysis included surveys of six parking facilities in the C-3 District (see Figure IV.E.1, p. IV.E.6) from which data on parking accumulation (distribution of parking over the day), duration (length of time parked), and occupancy (total number of vehicles parked) were calculated for each facility. The data were used to differentiate between existing short-term and long-term parking demand in the C-3 District and were expanded to project area-wide conditions in the C-3 District./10/

The parking demand has been estimated for both the existing (1981/82) and future (1984, 1990, 2000) conditions. Demand is estimated on the basis of the number of daily vehicle trips that would occur for each target year. The total equivalent daily parking demand includes the short-term demand as well as the long-term demand. The long-term demand is estimated on the basis of the total numbers of employees expected to drive in each target year. The short-term demand is based on the total number of non-work vehicular trips and includes the use of a turn-over rate (developed from analysis of parking patterns at the six parking facilities) which was used to convert total demand for short-term parking to equivalent daily demand. The long-term demand assumes one vehicle per space per day, and the short-term assumes six vehicles per space per day (which assumes that short-term parkers stay in one location an average of two hours). While employee vehicle travel (long-term parking demand) is concentrated in the peak hours, other travel (short-term parking demand) occurs throughout the working day. Because the other travel is distributed over the entire day, not all of the short-term parking demand occurs at the same time (the turnover factor is used to compensate for the distribution over time), and consequently, one parking space may be used by more than one vehicle during the working day.

The estimated demand (both long-term and short-term) for parking from the C-3 District in 1981/82 was about 43,000 spaces, which would occupy about 91% of the 47,000 parking spaces in and near the C-3 District. The short-term parking demand, while representing about 25% of the equivalent daily demand, is about 65% of the daily vehicle travel. Although the equivalent daily demand would leave about 10% of the parking supply vacant, surges in short-term demand (more travel in one period than in another period) can cause temporary overloads of parking facilities within one or more of Subareas, even though parking may be available elsewhere in the C-3 District. Subarea boundaries are shown in Figure II.1, p. II.5.

The Employee Survey included a question regarding the distance from parking locations to workplaces. The responses indicate that 16% of the C-3 District employees park in the same block as the workplace, 31% within one block, 60% within two blocks, 79% within three blocks, 90% within four blocks, and 95% within five blocks. For non-work vehicle trips, the majority of vehicles would be parked short-term in the respective Subarea.

The parking demand from the C-3 District includes demand from both construction workers and service vehicles. The average hourly service vehicle parking demand (see Table J.6, Appendix J, p. J.27) for 1981/82 was about 880 equivalent daily spaces. Some of this demand was accommodated in existing off-street loading areas; the majority of the demand was served curbside at the approximately 1,150 loading spaces in the C-3 District (this number is reduced to 520 after 1:00 p.m.). Loading demand not served off-street or curbside takes place from travel lanes and impedes traffic.

The number of construction workers in the C-3 District varies both on a daily basis and on a seasonal basis. For 1981/82, there were an estimated average of 7,300 construction workers in the C-3 District on an average weekday (see Appendix H). Parking demand in 1981/82 from construction workers can be assumed to be less than 7,300 spaces, depending upon the number of workers using transit or riding with others (for which information is not available). Not all of the construction worker demand required space in public parking facilities as some of the demand was accommodated at construction sites and materials storage sites.

In addition to parking in and near the C-3 District, the C-3 District employees and visitors generate parking demand at locations near major transit stations outside of the downtown. The Employee Survey data were analyzed to determine the magnitude of this parking demand as it would affect residential neighborhoods in the City. The Employee Survey indicates that about eight percent of the employees using Muni and about seven percent of the employee using BART in the Westbay drive a vehicle prior to boarding Muni or BART. About 88% of the drivers reside in San Francisco and the remainder live on the Peninsula (11%) or in the East Bay (1%). Thus, in 1981/82, there were about 10,000 daily automobile / Muni linked trips which indicates that San Francisco neighborhoods provided parking for about 10,000 vehicles of C-3 District employees that resided, for the most part, in other San Francisco neighborhoods. The survey results showed no other incidences of linked travel that would indicate commuters parking in San Francisco neighborhoods.

A review of development under construction in the downtown (as of September 1982) indicates that approximately 1,000 net new parking spaces would be added between 1981 and 1984. The total number of spaces available to the C-3 District in 1984 would therefore be about 48,000. The expected demand (both long-term and short-term) for spaces in 1984 would be about 45,300, which would occupy approximately 94% of the parking supply. The 1984 demand would represent an increase of about five percent over the 1981/82 demand. Service vehicle parking demand (see Table J.6, Appendix J) in 1984 (included in the total demand) would be about 950 spaces per hour, an increase of about eight percent from 1981/82.

As discussed in Appendix H, annual average construction employment in 1984 would be about 5,270 workers. Accurate estimation of the equivalent daily parking demand from construction workers (comparable to the above estimates) on the basis of the estimates of annual average employment is not possible because the employment estimates are made on the basis of person-years of construction labor, not the number of workers (see Appendix H, Table H.11). Because of daily and seasonal variations in construction employment, the demand from construction workers on a given day may be substantially higher or lower than the annual average value.

Pedestrian Circulation

Within the C-3 District, the predominant form of transportation is not vehicular, but pedestrian. Pedestrian travel is generally the basis of travel to and from land uses within the C-3 District. Table IV.E.1 illustrates the predominance of pedestrian travel, particularly with regard to non-work travel. Although only about five percent of the employee (work-related) travel is shown as primary-mode walk travel (travel made entirely on foot), almost all of the work-related travel becomes pedestrian travel in the C-3 District as employees must walk from their primary modes of travel (auto, transit) to their places of employment.

Eight locations within the C-3 District (see Figure IV.E.2, p. IV.E.11) were selected as representative of pedestrian conditions on the basis of previous studies./11/ Because of the trip linkage involved in much of the pedestrian travel in the C-3 District, the travel demand process could not be used to accurately estimate changes in pedestrian travel at the eight special study locations. Rather, the changes in pedestrian movements at the study locations are based on the changes in land use and employment in the Subareas. The future numbers of employees and type of business activity are the primary factors in the change in pedestrian movements. The individual Subareas were considered the basic analysis units, with changes in the pedestrian movements based on changes in the Subareas (see Figure II.1 for Subarea boundaries). Five of the pedestrian study locations are in Subarea 1, and three are in Subarea 6. The eight study locations represent 67 block faces, or sidewalk segments.

Pedestrian volume data from 1981/82 for both the noon and p.m. peak hours were used as the basis for the analysis. Although pedestrian volume data (i.e. pedestrians per hour) can be used to show differences between locations, volume data are not accurate indicators of sidewalk operating conditions. Therefore, the level of service concept, similar to that used to describe operating conditions on vehicular facilities, has been used to analyze pedestrian flows in relation to sidewalk capacities. Drawing from the work of Puskarev and Zupan (see Appendix J), pedestrian flow rates (i.e., pedestrians per foot of effective sidewalk width per minute) were calculated from the volume data for each of the 67 block faces./12/ Table J.7, Appendix J, p. J.30, describes the flow regimes that are used to classify the pedestrian flow rates.

For the 1981/82 noon-hour, the analysis identified two locations with Constrained Flow; 41 locations with Impeded Flow; and the remaining (24) locations with Unimpeded Flow (see Figure IV.E.4, p. IV.E.44). Noon-hour pedestrian flows tend to be uniform with little platooning (bunching) effects, although there are conflicting cross movements of pedestrians. P.M. peak-period flows, although not as intense as noon-hour flows in most locations, exhibit more volume surges and platooning effects. P.M. peak pedestrian flows are more directional and, thus, have fewer conflicting pedestrian cross movements. For the 1981/82 p.m. peak-hour, the analysis identified 36 locations of Impeded Flow (for average conditions, which would be Constrained Flow for platoons); 31 locations of Unimpeded Flow (Impeded Flow for platoons); and no locations of Constrained Flow (see Figure IV.E.5, p. IV.E.45).

For the Setting year, 1984, the analysis of noon-hour conditions identified four locations of Constrained Flow and 46 locations of Impeded Flow; an increase of two locations of Constrained Flow and five locations of Impeded Flow over 1981 conditions. Figure IV.E.4 shows these changes. For the 1984 p.m. peak hour, the analysis identified one location of Constrained Flow (Crowded Flow in platoons) and 40 locations of Impeded/Constrained Flow. Figure IV.E.5 shows these changes. The total number of locations with Impeded Flows or worse would increase by 16% for the noon hour and by 14% for the p.m. peak hour between 1981/82 and 1984.

Pedestrian mobility in 1984, although similar to that in 1981/82, would be expected to be generally more confined than under 1981 conditions as there would be an increase in the overall number of C-3 District users.

IMPACTS

Travel Demand Analysis

The travel demand analysis for the target years of 1990 and 2000 followed much the same procedures as those used for 1981/82 and 1984. Trip generation rates were used to estimate total travel on the basis of C-3 District employment. P.M. peak-period and peak-hour travel was assigned to travel modes on the basis of modal split percentages (see Appendix J).

The future modal split percentages have been assumed to change over the period 1984 to 2000. Historically, there has been a trend toward increased transit use for commuting by employees of the C-3 District. The methodology used to forecast the future modal splits (discussed in Appendix J) relies upon the assumption that increasing levels of congestion and the resultant increased costs associated with commuting during peak periods would make commute alternatives (transit, ridesharing) more attractive than driving alone and, hence, a greater percentage (than existing) of C-3 District employees would commute on transit or in carpools or vanpools.

The Downtown Plan (on p. 117) presents Goals regarding increased ridesharing and transit use by downtown commuters. The Goals, developed on the basis of data from the greater downtown area, seek an approximately 13% increase in both transit use and ridesharing by employees by the year 2000. The travel demand analysis has been conducted independent of the Plan's Goals for employee ridesharing and transit use. The Plan's Goals are designed to allow growth in employment in the downtown without increasing the total number of commuter vehicles (from the existing condition). The analysis used in this report has assumed that growth in commute travel by automobile would occur (to some extent) in each corridor, if not during the peak hour, then during the peak period. The rationale for the forecast growth (described in Appendix J) has relied upon the assumption that C-3 District commuters would shift to transit and ridesharing only as capacity is available to accomodate the shift. The assumptions used in this analysis regarding the amount of future transit service to be provided differ from the proposals called for in the Downtown Plan. Section V.E, Mitigation, describes the Plan's Policies and Implementing Actions and quantifies the effects of those Actions as they would affect transit service over and above the levels of future transit service assumed for this analysis. Projections of future transit service availability in this analysis are made on the basis of the assumption that the physical configuration of the transit network serving San Francisco would not be substantially altered beyond the changes described in each operator's Five-Year Plan. Service improvements have been assumed to occur throughout the period from 1984 to 2000.

This analysis has developed specific data for the C-3 District commuter that somewhat differ from the greater downtown data used in the preparation of the Plan. Vehicle occupancies of C-3 District commuters during the 1981/82 peak period were 1.24 persons per vehicle for San Francisco, 1.76 for the Peninsula, 2.35 for the East Bay, 1.46 for the North Bay and 1.41 over all corridors. The Plan reports vehicle occupancies (see Table 18, p. 117 of the Plan) of 1.35 for San Francisco, 1.25 for the Peninsula, 1.68 for the East Bay, 1.44 for the North Bay, and 1.4 persons per vehicle over all corridors. By the year 2000, the Plan's Goals call for vehicle occupancies in individual corridors to increase by 10% to 20% which would result in a 13.5% increase in vehicle occupancy over all corridors. This analysis has projected individual corridor increases that range from two percent to eight percent and result in an overall increase of four percent. Similarly, the Plan and this analysis differ in terms of the transit/auto split. Of the C-3 District peak-period commuters in 1981/82 using auto and transit, 36% used auto and 64% used transit. The Plan in Table 19, p. 117 of the Plan, reports a split of 45% auto and 55% transit. By the year 2000, the Plan's Goals call for a split of 38% auto and 62% transit which is a 13% increase in transit use. This analysis has projected a split for the year 2000 of 33% auto and 67% transit which is a five percent increase in transit use. The net result of the process is that this analysis has projected about 10,000 more peak-period vehicle trips (distributed over all corridors) than does the Downtown Plan.

Of the 10,000 peak-period vehicle trips, the Downtown Plan's Goals would call for 40% to be accommodated on transit (over and above the increase in transit use calculated in this analysis). Approximately 30% of the vehicle trips are made by San Francisco residents. Because the street system of San Francisco does not have capacity constraints like those encountered by suburban commuters on the regional bridege and freeway system, the San Francisco residents would have little to prevent them from driving downtown. The Plan's Goals call for the potential increase in auto use by City residents to be ameliorated by an increase in ridesharing. About 10% of the 10,000 peak-period vehicle trips represent regional auto travel that could still be accommodated on the freeway system in the peak period. The Plan's Goals call for the increase in auto travel from these motorists to also be precluded by an increase in ridesharing. The remaining 20% have been considered in this analysis as excess travel demand that could not be accommodated in the peak period (see Table IV.E.4) with an increase in the level of transit available in the peak period. To achieve the Goals of the Downtown Plan, a combination of transit service increases and increased ridesharing incentives would need to be provided to accommodate the 10,000 drivers. The Plan presents a series of Implementing Actions that would alter the physical configuration of the transit network serving San Francisco.

This section contains discussion of the implications of the excess demand and Section V.E, Mitigation, contains discussion of the Implementing Actions of the Downtown Plan.

1990 Impacts

The total employment for the C-3 District in 1990 is forecast as 322,500 employees (see Section IV.C). Of this total, 6,500 employees would be classified as building maintenance and security and have been excluded for the purposes of trip generation. The total 1990 C-3 District employment for the purpose of trip generation would be 321,400. Daily travel from the C-3 District in 1990 is estimated to be about 2,740,000 pte; an increase of 13% over 1984. P.M. peak-period travel in 1990 from the C-3 District would be about 332,500 pte; an increase of 14% over 1984. The total p.m. peak-hour person trip-ends expected in 1990 would be about 199,100 pte, as shown in Table IV.E.1, p. IV.E.25. The percent change from 1984 to 1990 for each transportation mode is indicated in the table. There would be an overall 14% increase in the number of peak-hour person trip-ends between 1984 and 1990.

The 1990 modal split differs from the 1984 modal split. The travel on all modes would increase because of the increase in the number of employees between 1984 and 1990. The distribution of work-related travel in autos in 1990 shows a shift to higher occupancy autos (carpool, vanpool) from Drive Alone from the 1984 distribution. This change can be seen in Table IV.E.1, where the percent change from 1984 for work travel shows a smaller increase for Drive Alone than for the Total. The overall 1990 modal split for work-related travel would continue to be about 60% on transit (transit does not include Drive Alone, Carpool, Vanpool, Motorcycle, Bicycle, Walk or Taxi in Table IV.E.1) during both the peak hour and the peak period (the peak-hour transit use would increase from 58% to 59% and the peak-period transit use would increase from 60% to 62% between 1984 and 1990). Peak-hour and peak-period non-work travel would continue to be predominantly pedestrian.

2000 Impacts

Under the Downtown Plan, the total C-3 District employment in the year 2000 would be about 372,100 employees (see Section IV.C). About 7,200 of the C-3 District employees would be building maintenance and security personnel which have been excluded from the trip generation process as discussed in the Setting. The total C-3 District employment for trip generation purposes would be 364,900 employees. Daily travel from the C-3 District in the year 2000 would be about 3,119,200 person trip-ends (pte); an increase of about 28% over 1984 and about 14% over 1990.

P.M. peak-period travel from the C-3 District in the year 2000 would be about 380,600 pte, of which, about 227,900 pte would occur in the peak hour. The year 2000 travel would represent an increase of about 14% over 1990 peak-hour and peak-period travel. The total increase in peak-period and peak-hour travel from 1984 to 2000 would be about 31% (about two percent per year compounded annually).

Travel by mode for the year 2000 peak-hour and peak-period is shown in Table IV.E.1. The differences in modal split between 1990 and 2000 are also shown in the table. Single-occupant auto use has been projected to decline as a percentage of the overall modal split between 1990 and 2000. The travel has been assumed to shift to transit and ridesharing (see Appendix J). Work-related travel during the peak-hour and the peak-period would be about 60% on transit (peak-hour transit use would increase from 59% to 61% and peak-period transit use would increase from 62% to 63% between 1990 and 2000); non-work related travel would continue to be predominantly pedestrian.

Transit

Transit capacity has been assumed to increase in the future but not to the levels called for in the Downtown Plan, nor to the extent necessary to satisfy the Plan's Goals. Each transit agency that serves the C-3 District has an annually updated Five-Year Plan that charts the growth and development of each transit agency. Capacity improvements proposed in the current cycle (1983 to 1988) of Five-Year Plans have been assumed to be in place by 1990 (see Appendix J, p. J.25). Additional capacity increases (see Appendix J, p. J.26) have been assumed to be in place by the year 2000.

Because transit capacity has been assumed to increase, the future peak-hour and peak-period transit loadings shown in Table IV.E.2, p. IV.E.29 are made on the basis of increased future capacities. The passengers per seat ratios are not as high as would be the case if the capacity increases did not occur. If less capacity is available in the future than has been assumed, the rate of increase in passengers per seat ratios would be greater than shown in Table IV.E.2 with the net effect being higher passengers per seat ratios. Conversely, if more transit capacity were available in the future, then additional travel demand could be absorbed and passengers per seat ratios could be lower than shown in Table IV.E.2.

The Downtown Plan contains several Implementing Actions designed to improve, or lead to improvement, or alter transit service to the C-3 District. The Actions are the following:

Primary Mode of Travel	1981/82 pte(b)		1984 pte (b)		% Change from 1981		1990 pte (b)		% Change from 1984		2000 pte (b)		% Change from 1984		% Change from 1990	
	Work	Other	Work	Other	Work	Other	Work	Other	Work	Other	Work	Other	Work	Other	Work	Other
P.M. Peak Hour																
Drive Alone	22,290	3,500	22,980	3,570	3.1	2.0	23,930	3,620	4.1	1.4	24,580	3,450	7.0	-3.4	2.7	-4.7
Carpool (c)	19,870		21,300		7.2		24,940		17.1		29,100		36.6		16.7	
Vanpool	2,330		2,530		8.6		3,100		22.5		3,620		43.1		16.8	
Muni	27,350	4,660	29,510	4,980	7.9	6.9	32,850	5,640	11.3	13.3	36,540	6,440	23.8	29.3	11.2	14.2
BART	20,660	2,700	22,320	2,850	8.1	5.6	27,630	3,350	23.8	17.5	36,120	3,890	61.8	36.5	30.7	16.1
AC Transit	7,450		8,860		8.2		9,410		16.7		9,250		14.8		-1.7	
SamTrans	1,780		1,900		6.7		2,360		24.2		3,050		60.5		29.2	
Charter/Club Bus	950		1,020		7.4		1,240		21.6		1,490		46.1		20.2	
CalTrain (SPRR)	2,530	700	2,720	730	7.5	4.3	3,600	860	32.4	17.8	4,360	1,010	60.3	38.4	21.1	17.4
GGT Bus	4,690	280	5,170	330	10.2	17.9	6,400	440	23.8	33.3	8,180	590	58.2	78.8	27.8	34.1
GGT Ferry	720		780		8.3		1,140		46.2		1,450		85.9		27.2	
Tiburon Ferry	160		180		12.5		210		16.7		260		44.4		23.8	
Jitney	420		450		7.1		480		6.7		580		24.2		20.8	
Motorcycle	320		330		3.1		380		15.2		410		28.9		7.9	
Bicycle	90		90		0.0		100		11.1		100		11.1		0.0	
Walk (d)	5,040	34,930	5,380	36,690	6.7	5.0	5,850	41,180	8.7	12.2	6,900	45,880	28.3	25.0	17.9	11.4
Taxi	420		430		2.4		480		11.6		560		30.2		16.7	
TOTALS	117,070	46,770	125,150	49,150	6.9	5.1	144,800	55,090	15.1	12.1	166,550	61,260	33.1	24.6	15.6	11.2
P.M. Peak Period																
Drive Alone	31,430	6,180	32,820	6,710	4.4	8.6	35,610	7,540	8.5	12.4	37,640	8,160	14.7	21.6	5.7	8.2
Carpool (c)	26,440		28,430		7.5		32,240		13.4		37,040		30.3		14.9	
Vanpool	2,930		3,360		14.7		3,960		17.9		4,610		37.2		16.4	
Muni	52,160	8,740	54,700	9,870	4.9	12.9	60,470	11,100	10.5	12.5	67,230	12,400	22.9	25.6	11.2	11.7
BART	29,290	5,020	32,050	5,910	9.4	17.7	40,060	6,620	25.0	12.0	52,930	7,660	65.1	29.6	32.1	15.7
AC	10,800		11,990		11.0		14,840		23.8		14,890		24.2		0.3	
SamTrans	2,690		2,900		7.8		3,410		17.6		4,530		56.2		32.8	
Charter/Club Bus	910		1,000		9.9		1,240		24.0		1,520		52.0		22.6	
CalTrain (SPRR)	3,430	1,310	3,700	1,490	7.9	13.7	4,360	1,670	17.8	12.1	5,300	1,860	43.2	24.8	21.6	11.4
GGT Bus	6,680	530	7,340	590	9.9	11.3	9,110	670	24.1	13.6	11,870	740	61.7	25.4	30.3	10.4
GGT Ferry	920		1,010		9.8		1,360		34.7		1,680		66.3		23.5	
Tiburon Ferry	270		300		11.1		370		23.3		450		50.0		21.6	
Jitney	730		780		6.8		860		10.3		990		26.9		12.2	
Motorcycle	700		740		5.7		820		10.8		920		24.3		15.1	
Bicycle	120		130		8.3		150		15.4		150		15.4		0.0	
Walk (d)	9,530	65,430	10,070	74,020	5.7	13.1	11,470	83,170	13.9	12.4	13,540	92,820	34.5	25.4	18.0	11.6
Taxi	820	370	860	420	4.9	13.5	950	470	10.5	11.9	1,040	520	20.9	23.8	9.5	10.6
TOTALS	179,850	87,580	192,180	99,010	6.9	13.1	221,280	111,240	15.1	12.4	256,330	124,160	33.4	25.4	15.8	11.6

(a) The values in this table for employee travel in 1990 and 2000 are calculated on the basis of the Downtown Plan's Goals regarding increased ridesharing and transit use not being met. If the Plan's Goals are achieved, the Drive Alone travel values for work trips would decrease from the above and the Carpool, Vanpool and transit values would increase.

(b) Total person trip-ends (pte) to destinations or from origins in the C-3 District.

(c) Carpools are vehicles with up to three persons including the driver.

(d) Exclusive pedestrian travel; does not include other pedestrian travel made in conjunction with travel on other modes (i.e., walking to a bus stop). (See text for discussion.)

SOURCE: TJKM Transportation Consultants

- Extend BART to the San Francisco Airport;
- Construct the Muni Metro turnaround at the Embarcadero;
- Construct the Muni Metro extension to the vicinity of Fourth and Townsend Streets;
- Examine alternatives for Muni Metro services to Geary Street and to Third Streets;
- Evaluate possible extension of Southern Pacific/Caltrain rail service;
- Initiate studies of the potential for light rail rapid transit to Marin County;
- Carry out Five-Year Plans for expanding transit service;
- Implement discount Muni transfers with all suburban corridor lines;
- Improve and expand the Transbay Terminal;
- Limit curbside on-street boarding of Golden Gate Transit and SamTrans bus service;
- Initiate feasibility studies for additional public or private ferry service;
- Implement Muni bus improvements for downtown circulation;
- Refine proposals and implement the Muni E and F streetcar lines;
- Implement additional shuttle transit between the C-3 District and transit terminals and peripheral parking facilities.

Of the above, only the Action to carry out Five-Year Plans (as discussed in Appendix J, p. J.25) has been included in the impact analysis although, capacity increases beyond those in the Five-Year Plans have been assumed to occur in this analysis. The above Actions are called for to achieve the Plan's Goals. The Goals require transit service expansion beyond that which is already planned in the carriers' five-year plans and beyond the levels assumed for this analysis. The remainder have been considered as mitigation measures and are analyzed in Section V.E, pp. V.E.4-V.E.18.

1990 Impacts

Transit demand in 1990 during the p.m. peak hour would increase over 1984 levels between 10% and 40% (see Table IV.E.2). The 1990 transit demand includes C-3 District travel, which has been projected to increase by about 14% on the average, and travel from outside the C-3 District, which has been assumed to increase on the basis of historic growth trends (see Appendix J for a discussion of the procedure). The variation in demand increase among the transit agencies is a combination of variations in the growth of non-C-3 travel and changes in the modal split of C-3 travelers.

Additional (over 1984) transit capacity has been assumed to be available in 1990 and this has influenced the shift among modes assumed to occur by 1990. As discussed in Appendix J on pp. J.16-J.20, the future peak-hour and peak-period modal splits have incorporated shifts from Drive Alone to ridesharing and transit (primarily among C-3 District employees). The almost 40% increase in demand for the Golden Gate Transit ferry is an example of this process. The Transit district has proposed to return the third Larkspur ferry to service by 1990 which would allow more frequent service during the peak hour and the peak period. The service improvement coupled with the increased commuting costs associated with an increase in auto traffic on the Golden Gate Bridge (see Table IV.E.3, p. IV.E.35) has been used as the basis to assume that the ferry service would attract patronage increases over and above the average 14% increase in peak-hour and peak-period travel between 1984 and 1990.

Peak-hour and peak-period transit passengers per seat ratios in 1990 would be approximately equivalent to the 1984 loadings. BART Transbay would improve to Level of Service E in both the peak-hour and the peak-period. Muni to the Northwest would continue in Level of Service E conditions in the peak hour despite service improvements; service to the Southwest would continue in E conditions during both the peak hour and the peak period. Table J.10, Appendix J, p. J.36, describes Levels of Service for transit. Overall, demand increases between 1984 and 1990 would require essentially all of the capacity improvements scheduled to occur prior to 1990./13/ Even with the proposed improvements, loadings would be slightly higher than existing (1981/82) conditions, although some improvement over 1984 conditions would occur.

With the capacity improvements, transit operations in 1990 would be similar to 1981/82 conditions in terms of the quality of service experienced by transit riders. The crowding on individual transit vehicles would be similar to that experienced in 1981/82; the duration of peak-of-the-peak conditions would be approximately the same as 1981/82, although the transit systems would be carrying about 20% more passengers in the peak-hour and the peak-period. Conditions on transit in 1990 would be expected to be better than in 1984.

It is important to note that the Five-Year Plan improvements for the transit system are designed to not only provide for future demand increases, but also to improve service levels from existing conditions. In order for new vehicle acquisitions to represent expansion of system capacity and not simple replacement, operating revenues would similarly need to be increased. During the 1990 peak hour, Muni service to the Northwest and the Southwest and BART service Transbay would exceed the desirable passengers per seat ratios of 1.25 and 1.30, respectively./14/ Although the transit demand in the three corridors in excess of the desirable loadings would be accommodated under crowded conditions and, thus would not be excess demand, demand in excess of the desirable loadings would mean that additional transit service over that assumed to occur by 1990 would need to be provided to allow transit operations in the three corridors to meet the goals set by Muni and BART (see Table IV.E.4, p. IV.E.36). To meet the goal of 1.25 passengers per seat in the peak hour, Muni would have to increase service by about one percent in the Northwest corridor and by about 15% in the Southwest corridor over the amount of service assumed to occur in 1990. To meet the goal of 1.30 passengers per seat, BART would have to provide a Transbay service increase of nine percent over the amount of service assumed to occur by 1990.

2000 Impacts

As was assumed for the period 1984 to 1990, both transit demand and capacity have been assumed to increase during the period 1990 to 2000. The peak-hour and peak-period transit demand has been estimated through the travel demand process and incorporates both increases in overall travel as well as changes in modal split (see Appendix J).

The transit capacity increases between 1990 and 2000 are not as well-defined as are the improvements between 1984 and 1990, primarily because the planning horizon of the Five-Year Plans is currently 1988. Transit capacity increases for each agency are discussed in Appendix J on p. J.26.

Future transit demand and loadings for both the peak hour and the peak period are shown in Table IV.E.2. Peak-hour transit demand on Muni in the year 2000 would increase about 25% over 1984 levels (which would be an increase of about 10% over 1990 levels) in the Northeast, Northwest and Southwest corridors. Muni demand in the Southeast corridor would increase about 40% between 1984 and 2000 (about 20% between 1990 and 2000). Peak-hour demand on the other agencies with the exception of AC Transit would increase between 30% and 70% during the period 1984 to 2000. AC Transit demand has been assumed to remain at 1990 levels since no improvements to transbay service are proposed to occur between 1984 and 2000 and because improved service for BART Transbay during the same period would be expected to attract potential AC Transit demand.

Peak-period increases in demand would be between 15% and 70% during the 1984 to 2000 period; 1990 to 2000 increases would be between 10% and 40%. Overall peak-period travel would be expected to increase about 30% between 1984 and 2000. Peak-hour and peak-period passenger loadings would be worse than in 1990, although most systems would operate in acceptable conditions (Level of Service D or better). However, BART Transbay and Muni to the Southwest would be in Level of Service E during the peak hour and the peak period.

		1981/82			1984				1990				2000				
Transit Agency	Screenline(c)	Demand(d)	P/S	LOS	Demand	P/S	LOS	% Change from 1981(e)	Demand	P/S(f)	LOS	% Change from 1984	Demand	P/S(f)	LOS	% Change from 1984	% Change from 1990
P.M. Peak Hour																	
Muni (g)	Northeast	6,500	1.07	D	7,100	1.16	D	9.2	7,900	1.13	D	11.3	8,800	1.05	D	23.9	11.4
	Northwest	7,600	1.17	D	8,200	1.26	E	7.9	9,200	1.26	E	12.2	10,100	1.25	D	23.2	9.8
	Southwest	12,500	1.34	E	13,500	1.45	E	8.0	15,100	1.44	E	11.9	16,600	1.42	E	23.0	9.9
	Southeast	4,900	0.98	C	5,300	1.06	D	8.2	6,200	1.03	D	17.0	7,400	1.01	D	39.6	19.4
BART	Trans-Bay Tube	14,800	1.41	E	16,100	1.53	F	8.8	20,500	1.42	E	27.3	27,900	1.42	E	73.3	36.1
	Civic Center	7,200	1.03	D	7,700	1.10	D	6.9	8,800	1.26	D	14.3	10,100	1.06	D	31.2	14.8
AC Transit	Bay Bridge	8,500	0.88	C	9,100	0.94	C	7.1	10,500	1.08	D	15.4	10,500	1.08	D	15.4	0.0
GGT Bus	Golden Gate Bridge	4,800	0.91	C	5,300	1.00	C	10.4	6,600	0.86	C	24.5	8,500	0.91	C	60.4	28.8
GGT Ferry	Bay	700	0.50	A	800	0.57	B	14.3	1,100	0.28	A	37.5	1,500	0.38	A	87.5	36.4
Tiburon Ferry	Bay	200	0.40	A	200	0.40	A	0.0	200	0.40	A	0.0	300	0.60	B	50.0	50.0
SamTrans	County Line	1,800	1.06	D	1,900	1.12	D	5.6	2,400	1.20	D	26.3	3,100	1.19	D	63.2	29.2
CalTrain (SPRR)	Fourth St. Station	2,900	0.57	B	3,100	0.61	B	6.9	4,000	0.65	B	29.0	4,900	0.79	C	58.1	22.5
P.M. Peak Period																	
Muni (g)	Northeast	12,000	1.01	C	12,600	1.06	D	5.0	13,900	1.01	D	10.3	15,500	0.95	C	23.0	11.5
	Northwest	12,600	1.09	D	13,100	1.13	D	4.0	14,100	1.07	D	7.6	15,300	1.05	D	16.8	8.5
	Southwest	22,000	1.24	D	23,300	1.31	E	5.9	26,000	1.29	E	11.6	28,700	1.29	E	23.2	10.4
	Southeast	8,400	0.92	C	9,100	1.00	C	8.3	10,300	0.95	C	13.2	12,100	0.88	C	33.0	17.5
BART	Trans-Bay Tube	23,300	1.39	E	25,800	1.54	F	10.7	32,600	1.42	E	26.4	44,100	1.40	E	70.9	35.3
	Civic Center	10,600	0.75	B	11,300	0.80	C	6.6	12,800	0.91	C	13.3	14,600	0.77	C	29.2	14.1
AC Transit	Bay Bridge	12,800	0.87	C	14,000	0.95	C	9.4	17,000	1.16	D	21.4	17,000	1.16	D	21.4	0.0
GGT Bus	Golden Gate Bridge	7,000	0.83	C	7,600	0.90	C	8.6	9,500	0.77	C	25.0	12,200	0.81	C	60.5	28.4
GGT Ferry	Bay	900	0.50	A	1,000	0.56	B	11.1	1,400	0.27	A	40.0	1,700	0.33	A	70.0	21.4
Tiburon Ferry	Bay	300	0.60	B	300	0.60	B	0.0	400	0.80	C	33.3	500	1.00	C	66.7	25.0
SamTrans	County Line	2,700	1.04	D	2,900	1.12	D	7.4	3,400	1.13	D	17.2	4,500	1.15	D	55.2	32.4
CalTrain (SPRR)	Fourth St. Station	4,100	0.62	B	4,500	0.68	B	9.8	5,200	0.64	B	15.6	6,200	0.77	C	37.8	19.2

(a) The values in this table are calculated on the basis of the Downtown Plan's Goals regarding increased transit use and transit service availability not being met. If the Plan's Goals are achieved, transit demand would increase over that shown above and the passengers per seat ratios would improve over those shown above.

(b) See Table J.10, Appendix J, p. J.36, for descriptions of Level of Service for bus transit.

(c) Screenlines shown in Figures IV.E.1 and IV.E.2.

(d) Demand includes both C-3 District riders and transit riders from outside the C-3 District.

(e) Percent change in demand.

(f) The years 1990 and 2000 include improvements (increases in the number of seats) scheduled to occur during the 1982-87 and 1983-88 Five-Year Plan cycles for each agency (see Appendix J). Not all of the transit improvements included as Implementing Actions in the Downtown Plan are included in the improvements assumed to occur; Section V.E discusses the implications of the Plan's Actions.

(g) Muni ridership cannot be summed over the corridors to give total system demand. Such a sum would incorrectly double count capacity on routes that serve more than one corridor (see text for more discussion).

SOURCE: TJKM Transportation Consultants, Environmental Science Associates, Inc.

As stated above, Muni's goals are to maintain passengers per seat ratios of 1.25 or less (Level of Service D)./14/ Thus, Muni service to the Southwest would need to be increased by an additional 14% between the years 1990 and 2000. BART's goals are to maintain loadings of 1.3 passengers per seat which would require an additional 9% service increase transbay over the levels assumed to occur in the year 2000./14/

If transit service were not increased beyond the amounts assumed to occur by the year 2000, transit operations (in terms of passenger comfort) would be essentially equivalent to 1981/82 conditions. Peak-hour and peak-period passengers per seat ratios would be about the same as 1981/82 ratios even though service (in some corridors) has been assumed to increase as much as 80% between 1981/82 and 2000.

Alternatively, if the Downtown Plan's Goals regarding increased transit use are achieved, and the proposals in the Plan regarding transit service improvements are fully developed and in place, the impacts on transit agencies would be less than described above. If the Goals are achieved, transit agencies would experience greater levels of demand than under this analysis but overall passenger loadings would be lower (and within desirable levels) because of increased transit service availability that would come about if the proposals stated in the Plan are developed.

Traffic

The local and regional freeway and bridge system serving the C-3 District has been assumed to remain essentially unchanged from the 1981/82 conditions. Some operational improvements are proposed to be implemented on the freeway system outside of San Francisco. One of these proposals would construct a new high occupancy vehicle (HOV) by-pass lane eastbound on I-80 from the toll plaza to the interchange with Powell Street in Emeryville./15/ While such a proposal would not alter the capacity of the Bay Bridge, it would provide an incentive for the use of carpools and vanpools and would improve bus transit operating times to the East Bay.

The Downtown Plan offers Policies and Implementing Actions that would alter the freeway and street system. Following are some of the Plan's Policies and Actions:

- Establish exclusive transit lanes on bridges and freeways where significant transit service exists.
- Install and improve transit lanes on downtown streets.

- Demolish the Embarcadero freeway.
- Reconstruct the stub-end of I-280.
- Reconstruct the Embarcadero surface roadway.
- Provide high-occupancy vehicle (HOV) lanes on freeways and their on-ramps.
- Control growth of automobile traffic in the downtown core.
- Channel auto traffic to primary vehicular streets.

Although some of the Actions would be within the City's ability to implement, none of the Actions have been considered as part of the impact analysis; rather, the effects of the Actions have been discussed in Section V.E, Mitigation, on pp. V.E.18-V.E.19. The Actions that recommend changes to the regional bridge and freeway system would require the cooperation of the California State Department of Transportation (CalTrans).

The impacts of the Embarcadero Freeway removal and the reconstruction of the stub end of I-280 are not analyzed in this EIR. These actions are part of a larger package of projects that are being analyzed in the I-280 Transfer Concept Program EIR/EIS. The package of preferred projects (the preferred alternative) has not yet been selected. As traffic operations at individual intersections vary widely between alternative packages it is presumptive and premature to implicitly select the preferred alternative now. Readers should refer to the I-280 Transfer Concept Program EIR/EIS for a comparative treatment of the alternatives.

1990 Impacts

Traffic impacts in 1990 have been analyzed on the basis of projections of vehicular demand. C-3 District vehicular travel has been projected on the basis of the travel demand process which has incorporated increases in employment in the C-3 District. The non C-3 components of vehicular travel at regional screenlines have been projected on the basis of historical trends as described in Appendix J on pp. J.20-J.25. As shown in Table IV.E.1, the percentage of single-occupant auto use (Drive Alone) by C-3 District employees has been assumed to decline in the future. Ridesharing and transit use has been assumed to increase in the future (see Appendix J). The increase in ridesharing (carpools and vanpools) has been moderated by the assumption that the only incentives currently available to encourage shifts to carpools and vanpools (outside of personal cost savings) would be HOV lanes on freeways and HOV by-pass lanes at on-ramps in the City that would allow a time savings to higher occupancy vehicles. The network of HOV facilities serving San Francisco is currently incomplete, so that while there may be an HOV lane in one direction on some facilities, a reciprocal lane is not available in the opposite direction. Additionally, where HOV lanes are provided in some cases, the lanes do not always by-pass congestion points; rather, the lanes give carpools and vanpools head-of-line privileges.

Traffic demand in 1990 at the regional screenlines to the East Bay would increase by about four percent over 1984 demand during both the peak-hour and the peak-period. Between 1984 and 1990 demand in the North Bay corridor would increase about three percent in the peak hour and about eight percent in the peak period. Demand in the Peninsula corridor would increase by seven percent during the peak hour and by nine percent in the peak period during the same period (see Table IV.E.3, p. IV.E.35). The demand increase in the East Bay corridor would have excess demand in both the peak hour (about 700 trip-ends) and the peak period (about 500 trip-ends). Excess demand in the regional corridors is shown in Table IV.E.4, p. IV.E.36. The reason that there would be less excess demand in the peak period is that about 200 trip-ends from the peak hour would be absorbed in the peak period. Although peak-hour auto demand on I-280 is shown to exceed the one-hour capacity, the excess one-hour demand would be absorbed during the peak period. There would be excess demand (100 trip-ends) during the peak period in the North Bay corridor.

Operating conditions on the regional freeway and bridge system in 1990 would be in the upper range of Levels of Service E with unstable flow and reduced operating speeds (about 35 mph). Peak-of-the-peak conditions would be expected to extend over longer periods of time and individual motorists would be expected to be delayed for longer periods of times during the evening commute.

Operating conditions during the peak hour and peak period at the 10 intersections in and near the C-3 District would be expected to deteriorate between 1984 and 1990 (see Figure IV.E.3, p. IV.E.38 and Table IV.E.5, p. IV.E.37). The intersection of Mission Street at Beale Street would be expected to operate in Level of Service E conditions. The intersections of Mission and First Streets, First and Harrison Streets, and Brannan and Sixth Streets would be expected to be in Level of Service F conditions during the peak hour. At these intersections, traffic operation could generally be described as poor with vehicles delayed up to several signal cycles. Appendix J, Table J.8, p. J.34, shows intersection Levels of Service. Operating conditions at all of the intersections would be expected to deteriorate from 1984 levels. However, only one intersection (First/Mission Streets) would be expected to shift into a worse Level of Service (E to F).

The increasing levels of congestion on surface streets would extend into the peak period as shown in Figure IV.E.3 where the areas of constrained (congested) flow would expand to affect operations at other intersections. Muni operations would be affected by the increased levels of congestion. Surface transit operations would be slowed which would have the effect of increasing the frequency of "crush" loadings on individual transit vehicles.

2000 Impacts

Vehicular travel demand has been assumed to continue to increase in the period 1990 to 2000. C-3 District employee travel has been assumed to continue to shift from single-occupant auto use to transit and ridesharing. If the Mitigation Measures are fully implemented, a shift of greater magnitude may occur. The assignments of travel demand by mode for the year 2000 contain excess demand in the Drive Alone mode (see Table IV.E.4). The excess demand has been left as unmet auto demand since the assumption was made that commuters would not shift to crowded transit lines nor would they shift to ridesharing without substantial increases in the HOV network of lanes and by-passes.

Table IV.E.3 shows the peak-hour and peak-period auto demand at regional screenlines for all of the analysis years. Demand during the peak hour in the East Bay and Peninsula corridors would be expected to increase about 15% between 1984 and 2000; an increase of about seven percent over 1990 levels. Peak-hour demand in the North Bay corridor would increase by about six percent between 1984 and 2000; an increase of about two percent over 1990. Both the East Bay and Peninsula corridors would have excess peak-hour demand that would not be met during the peak period. The North Bay corridor would have excess demand in the peak period. As shown in Table IV.E.4, there would be excess demand of about 1,300 trip-ends in the East Bay corridor. If this excess demand were assumed to use BART during the peak period, the passenger per seat ratio would increase from 1.40 to 1.44 (see Table IV.E.2). With BART projected to operate in excess of desired loadings, such an increase would require service increases of an additional four percent over the increase needed to meet the desired loadings (12% total increase over that assumed to occur). The Peninsula corridor would have excess demand of about 500 trip-ends during the peak period. This demand could be accommodated on CalTrain during the peak period (loadings would increase from 0.77 to 0.83 passengers per seat). If SamTrans were to absorb all of the excess demand, loadings would increase from 1.15 to 1.28 passengers per seat. If BART Westbay were to absorb some of the excess demand, then there would be increases in demand on SamTrans routes serving the Daly City station and increased auto demand (and parking demand) on streets near the Daly City station. The excess demand in the North Bay corridor (about 500 trip-ends) could be accommodated by Golden Gate transit bus service. Loadings would increase from 0.81 to 0.85 passengers per seat by the excess demand.

Operating conditions at the regional screenlines would be at or near capacity in Level of Service E (see Appendix J, Table J.9 for freeway Levels of Service). Traffic flow conditions would be expected to be very unstable and could experience temporary flow interruptions throughout the peak-period. Peak-of-the-peak conditions would be prevalent during the peak hour and may extend into the peak period.

Figure IV.E.3 and Table IV.E.5 show peak-hour intersection operations. Three of the ten intersections would be expected to operate in Level of Service E conditions and four of the intersections would be in Level of Service F conditions during the p.m. peak hour. Peak-hour conditions would be expected to deteriorate at all of the intersections by the year 2000. Expanded areas of traffic congestion would disrupt surface Muni operations. Service to the Northwest portion of the City would be adversely affected by the Level of Service E conditions at the intersections of Sutter and Stockton Streets and Montgomery and California Streets. Peak-of-the-peak conditions would be expected to occur over longer periods by the year 2000.

Parking

The Downtown Plan proposes several Policies and Implementing Actions regarding parking management in and near the C-3 District. As discussed in the Setting, the travel associated with short-term parking demand represents a substantial portion of the daily vehicular travel in the C-3 District. The Plan mirrors the Objectives and Policies of the Master Plan in calling for limiting new commuter parking in the C-3 District and in promoting the use of existing parking space in the C-3 District for short-term use./16/

The Plan offers the following Implementing Actions regarding parking:

- Restrict new long-term parking facilities to the periphery of downtown;
- Construct new long-term parking garages only as needed to replace the loss of long-term parking in the C-3 District;
- Expand the Sutter-Stockton Garage by 450 spaces;
- Set parking rates to favor short-term parking.

TABLE IV.E.[illegible]: OUTBOUND P.M. PEAK-HOUR AND PEAK-PERIOD TRAFFIC VOLUMES AND CAPACITIES AT REGIONAL SCREENLINES(a), 1981/82, 1984, 1990 AND 2000 UNDER THE DOWNTOWN PLAN(b)

		1981/82	1984		1990		2000		
P.M. Peak Hour	Capacity(c)	Demand(c)	Demand(b)	% Change From 1981	Demand(b)	% Change From 1984	Demand(b)	% Change From 1984	% Change From 1990
Bay Bridge (I-80)	9,000	8,500 (d)	8,540	0.5	9,180 (e)	7.5	9,790 (e)	14.6	6.6
Golden Gate Bridge (US-101)	7,200	6,610	6,740	2.0	7,020	4.2	7,150	6.1	1.9
US-101 (south of Harney Way) (f)	8,000	7,100	7,390	4.1	7,890	6.8	8,400 (e)	13.7	6.5
I-280 (between Alemany Blvd. and San Jose Avenue) (f)	8,000	7,320	7,610	4.0	8,120 (e)	6.7	8,650 (e)	13.7	6.5
P.M. Peak Period									
Bay Bridge (I-80)	18,000	17,500	17,880	2.2	18,460 (e)	4.5	19,330 (e)	8.1	4.7
Golden Gate Bridge (US-101)	14,400	13,500	13,870	2.7	14,500 (e)	3.2	14,850 (e)	7.1	2.4
US-101 (south of Harney Way) (f)	16,000	13,630	14,200	4.2	15,470	8.9	16,530 (e)	16.4	6.9
I-280 (between Alemany Blvd. and San Jose Avenue) (f)	16,000	13,060	13,620	4.3	14,860	9.1	15,890	16.7	6.9

(a) See Figure IV.E.2 for screenline locations.

(b) The values in this table for the years 1990 and 2000 are calculated on the basis of the Goals of the Downtown Plan regarding increased ridesharing and transit not being fully achieved. If the Plan's Goals are achieved, the traffic volumes for th years 1990 and 2000 would be similar to those shown for 1984.

(c) Vehicles per hour for the peak hour and vehicles per two hours for the peak period. Appendix J, Table J.9, shows the relationship between volume-to-capacity ratios and Levels of Service for freeways.

(d) Although the capacity of the Bay Bridge is calculated to be 9,000 vehicles per hour (vph), the one-hour value shown for demand represents the effective capacity. During high volume periods, traffic flow approaching the Bay Bridge is sensitive to the concentration of merging vehicles and to the occasional interruptions by stalled vehicles and/or accidents. When slowdowns on the Bridge occur, flow conditions on the freeways and feeder streets rapidly deteriorate. Even though the incidents that cause the slowdowns on the Bridge are temporary and are quickly cleared, the time required for conditions to return to normal at the approaches to the Bridge may extend beyond the peak hour. The demand figures for the one-hour and two-hour periods are averages of several days and, thus values for individual days may be different than the average. Excess demand in the peak hour has been calculated using the peak-hour demand figure as a base.

(e) Demand in excess of capacity; see text for discussion of implications of excess demand as regards transit use and increased ridesharing.

(f) US-101 and I-280 meet at a freeway-to-freeway interchange located between the downtown and the county line. Both of the freeways upstream of (preceeding) the interchange have capacity conditions that are slightly different than at the county line. Because of geometric configurations in the interchange area, the lane capacity of the two freeways is 1,800 vehicles per hour per lane rather than 2,000 vehicles per hour per lane at the county line. Thus, the one-hour capacity of each facility would be 7,200 vph. Although the capacity conditions upstream of the interchange would appear to present a worse case for analysis, conditions have been analyzed at the county line because of the abundance of surface routes that allow traffic from the downtown to bypass the US-101/I-280 interchange. The number of parallel surface routes available to downtown traffic diminishes substantially by the time the freeways cross the county line. The downtown traffic destined for Peninsula locations that has by-passed the interchange has been assumed to have re-entered the freeways between the interchange and the county line.

SOURCE: TJKM Transportation Consultants, Environmental Science Associates, Inc.

TABLE IV.E.4: C-3 DISTRICT EXCESS TRAVEL DEMAND BY TRAVEL CORRIDOR, 1984, 1990 AND 2000 UNDER THE DOWNTOWN PLAN (a)

	Northeast	Northwest	Southwest	Southeast	Peninsula	East Bay	North
1984 Peak Hour							
Auto (b)							
Transit (c)		100	1,900			2,500	
Total		100	1,900			2,500	
1984 Peak Period							
Auto (b)							
Transit (c)			1,100			4,000	
Total			1,100			4,000	
1990 Peak Hour							
Auto (b)					100	700	
Transit (c)		100	2,000			1,800	
Total		100	2,000		100	2,500	
1990 Peak Period							
Auto (b)						500	10
Transit (c)			900			2,700	
Total			900			3,200	10
2000 Peak Hour							
Auto (b)					1,000	1,300	
Transit (c)			2,000			2,400	
Total			2,000		1,000	3,700	
2000 Peak Period							
Auto (b)					500	1,300	50
Transit (c)			800			3,300	
Total			800		500	4,600	50

(a) The values in this table are calculated on the basis of the Goals of the Downtown Plan regarding increased ridesharing and transit use not being achieved.
(b) Excess travel demand in the Drive Alone mode category.
(c) Demand in excess of the desired loadings on transit agencies.

SOURCE: Environmental Science Associates, Inc.

TABLE IV.E.5: PEAK-HOUR VOLUME-TO-CAPACITY RATIOS (V/C) AND LEVELS OF SERVICE (LOS) (a) AT SPECIAL STUDY LOCATIONS (b), 1981/82, 1984, 1990, AND 2000 UNDER THE DOWNTOWN PLAN (c)

	1981/82		1984		1990		2000	
Intersection	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Battery & Washington Streets(d)	0.64	B	0.65	B	0.69	B	0.71	C
Battery & Clay Streets	0.72	C	0.73	C	0.79	C	0.85	D
Beale & Mission Streets	0.89	D	0.92	E	0.99	E	1.05	F
Brannan & Sixth Streets	1.12	F	1.18	F	1.28	F	1.41	F
California & Montgomery Streets	0.86	D	0.87	D	0.90	D	0.94	E
First & Mission Streets	0.93	E	0.98	E	1.05	E	1.11	F
First & Harrison Streets	1.04	F	1.10	F	1.17	F	1.30	F
Howard & New Montgomery Streets	0.83	D	0.83	D	0.86	D	0.90	D
Market & Third Streets	0.84	D	0.86	D	0.89	D	0.91	E
Stockton & Sutter Streets	0.83	D	0.85	D	0.88	D	0.92	E

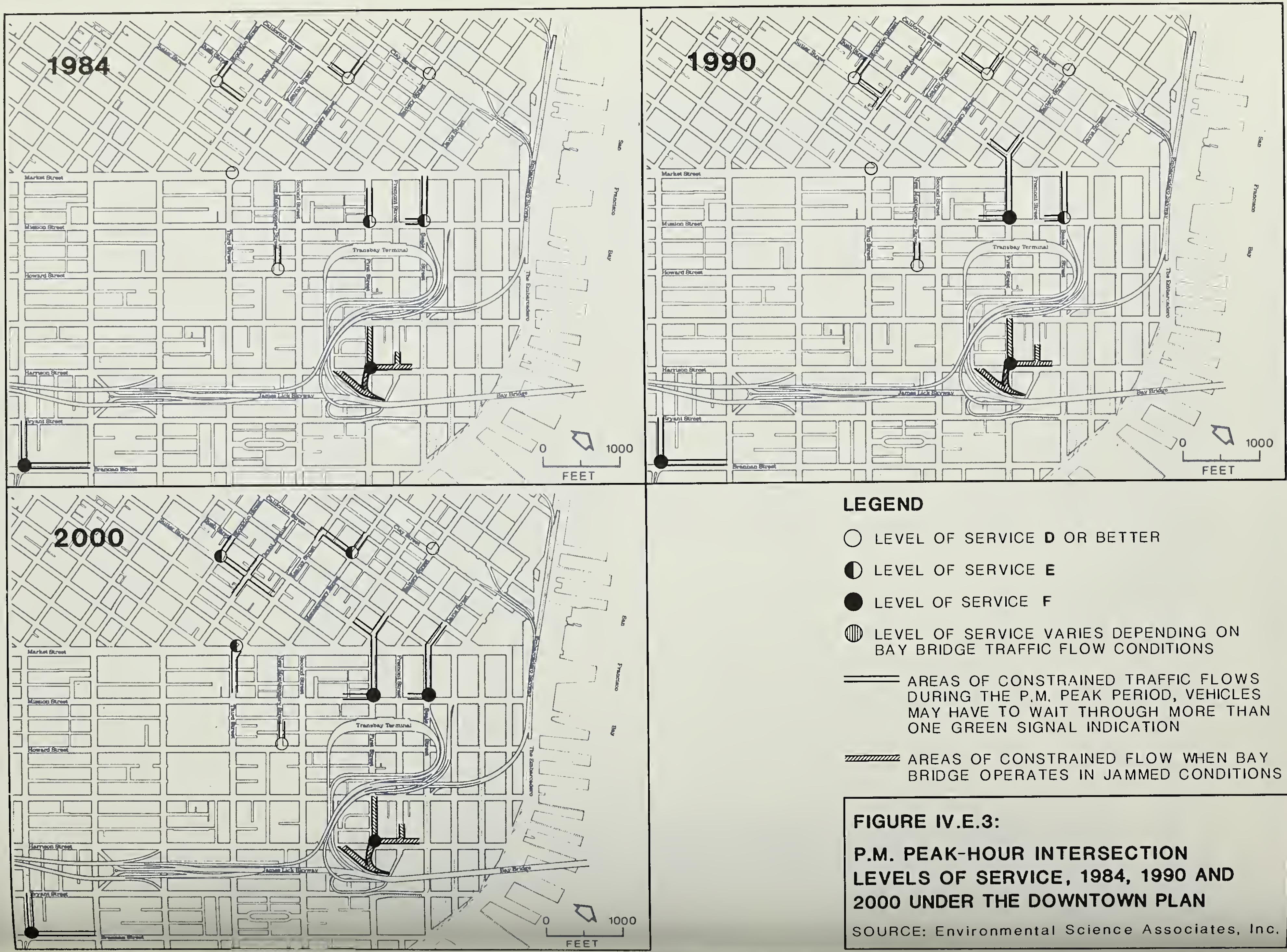
(a) Level of Service descriptions and relationship to V/C ratios are shown in Appendix J, Table J.8.

(b) See Figure IV.E.3 for special study locations and a graphical depiction of this material.

(c) The values in this table for the years 1990 and 2000 are calculated on the basis of the Goals of the Downtown Plan regarding increased ridesharing and transit not being fully achieved. If the Plan's Goals are achieved, the V/C ratios for the years 1990 and 2000 would be similar to those shown for 1984.

(d) Data for this intersection is for the a.m. peak hour because Washington Street carries traffic from an off-ramp from the Embarcadero Freeway. During the p.m. peak hour, volumes on Washington Street are less than half the a.m. peak hour volumes.

SOURCE: TJKM Transportation Consultants



LEGEND

○ LEVEL OF SERVICE **D** OR BETTER

◐ LEVEL OF SERVICE **E**

● LEVEL OF SERVICE **F**

◍ LEVEL OF SERVICE VARIES DEPENDING ON BAY BRIDGE TRAFFIC FLOW CONDITIONS

═ AREAS OF CONSTRAINED TRAFFIC FLOWS DURING THE P.M. PEAK PERIOD, VEHICLES MAY HAVE TO WAIT THROUGH MORE THAN ONE GREEN SIGNAL INDICATION

▨ AREAS OF CONSTRAINED FLOW WHEN BAY BRIDGE OPERATES IN JAMMED CONDITIONS

FIGURE IV.E.3:

P.M. PEAK-HOUR INTERSECTION LEVELS OF SERVICE, 1984, 1990 AND 2000 UNDER THE DOWNTOWN PLAN

SOURCE: Environmental Science Associates, Inc.

Only one of these Implementing Actions (expansion of the Sutter-Stockton Garage) has been considered in the analysis of future impacts; the remainder have been considered as mitigation measures, see Section V.E, p. V.E.20-V.E.22. The Sutter-Stockton Garage is a Parking Authority garage located in Subarea 6 that serves primarily as a short-term parking facility for the Union Square retail area. There is currently a proposal before the City Planning Commission to expand the Sutter-Stockton Garage by 365 spaces. This expansion has been included in the 1990 Impacts.

Regarding the remainder of the Implementing Actions for parking, the City Planning Commission has already approved (as of August 25, 1983) development that would increase the parking supply in the downtown area by 80 net spaces (i.e., total new less removed existing); this parking has been added to the 1990 supply. Beyond 1990, no new parking has been assumed to be developed in the C-3 District, neither has any existing parking been assumed to be removed.

Construction of replacement parking on the periphery of downtown has the potential to supply about 6,600 spaces. The location and potential for development of replacement parking is discussed in the Downtown Plan (p. 126) and in a report prepared by the Department of City Planning./17/ The net effect of construction of replacement parking on long-term parking demand would be minimal (i.e., the new parking on the periphery of downtown would replace parking lost in the C-3 District and would not create demand to become either a surplus or a deficit of parking); however, the replacement parking would have the effect of relocating auto travel that currently enters the C-3 District to park to areas outside the C-3 District where the replacement parking would be located.

Revising the parking rate structure to favor short-term parking could have the effect of displacing commuter (long-term) parking from the C-3 District. The parking rate structures at Parking Authority facilities in the C-3 District currently favor short-term parking. The rate structures at most privately operated commercial parking facilities in the C-3 District favor long-term parking. The effect of rate structures on parking demand is purely economic in that a long-term parker may choose to pay the more expensive charges (fees) for parking in a short-term facility. Thus, commercial parking in the C-3 District has the potential to be used as long-term parking if the users are willing to pay the higher costs. An example of this situation can be seen at the Sutter-Stockton Garage where about 15% of the garage users park long-term even though the facility has a short-term rate structure./18/ Consequently, the effects of modified rate structures have not been treated in Impacts; rather the effects are discussed in Section V.E, Mitigation.

The Plan recognizes the need for adequate loading (and service vehicle) space within the C-3 District and offers the Implementing Action of revising the Planning Code to require greater levels of off-street loading space in new developments. City Planning Commission Resolution No. 9286 contains the same proposals for increased loading space as does the Plan./19/ The effects of providing more loading space off-street are discussed under Impacts.

1990 Impacts

Parking demand in 1990 has been estimated on the basis of the number of daily vehicular trips generated by the C-3 District. The C-3 District would have a total (both long-term and short-term) parking demand in 1990 of about 51,300 equivalent daily spaces. Parking demand would increase about 13% between 1984 and 1990. If the Goals of the Downtown Plan are met and the amount of commuter vehicle traffic entering the City does not increase, total parking demand would be about 46,600 equivalent daily spaces; the three percent increase being caused by increased other (non-work) travel.

The parking supply in and near the C-3 District would be expected to increase during the period 1984 to 1990. Development approved by the City (as of August 25, 1983) would add about 80 net (i.e., total new less removed existing) parking spaces in the downtown. A proposed addition to the Sutter-Stockton garage (365 spaces), a parking facility under construction near Moscone Center (740 spaces) and a proposed parking facility in the Yerba Buena Center Redevelopment Area (1,500 spaces) would add a total of about 2,600 spaces in and near the C-3 District. Additionally, seven development proposals filed since August 25, 1983 that have been included in the 1990 land use analysis (Section IV.B) have the potential to add about 300 net spaces in and near the C-3 District. Thus, the total parking supply in and near the C-3 District in 1990 would be approximately 51,000 spaces.

The parking demand in 1990 would exceed the supply of parking space by less than one percent (300 spaces). The excess parking demand would cause a migration of parking into areas adjacent to the C-3 District and would increase competition for parking in those areas. The excess demand could, potentially, increase the incidence of parking in residential areas. Motorists in 1990 would be expected to experience greater difficulty in locating parking during mid-day periods as individual facilities would be occupied at higher levels than in 1984 for longer periods of time. Short-term parkers (about 25% of the total demand) would be expected to encounter increasing levels of competition for short-term space from long-term parkers.

Average service vehicle demand in 1990 would be approximately 1,040 spaces per hour; an increase of nine percent over 1990. If new construction in the C-3 District between 1984 and 1990 incorporates the off-street loading recommendations in City Planning Commission Resolution No. 9286 (and in the Plan), then an increasing amount of the service vehicle parking demand may be satisfied in off-street loading areas rather than curbside. The 1990 parking demand calculations include the service vehicle demand; the 1990 supply estimates do not assume any change in off-street loading space from 1981 conditions and, thus present a worst-case analysis.

Average annual construction employment in 1990 is projected to be about 5,400 workers (see Appendix H), an increase of less than two percent from 1984. Thus, parking demand from construction workers in 1990 would be expected to be essentially the same as in 1984. The magnitude of the demand can not be predicted precisely because of the daily and seasonal variations in the number of workers in the C-3 District on any one day.

2000 Impacts

The C-3 District would generate demand for approximately 58,000 equivalent daily parking spaces in the year 2000 under the Downtown Plan; an increase of 28% from 1984 (13% from 1990). Short-term demand would continue to represent about 25% of the total demand. Although, as discussed in Section IV.B, there may be a loss of existing parking to new construction in the C-3 District (without replacement parking being provided), portions of the parking supply are outside of the C-3 District and would most likely have additional parking provided as part of new development and, thus, the parking supply has been assumed to remain at 1990 levels. There would be a parking deficit of about 6,000 spaces in the year 2000 if vehicular demand occurs as projected. However, as shown in Table IV.E.3, p. IV.E.35, the analysis for the year 2000 forecasts excess auto demand in the peak hour and the peak period. If the excess demand is accommodated on transit or ridesharing; then the overall parking demand would decrease from the above estimate by about 2,300 spaces.

The remaining excess parking demand would be expected to overflow into residential and commercial areas adjacent to the downtown. This could cause parking shortages for mid-day visitors and shoppers within the downtown area. One impact of a spreading of demand into adjacent residential and commercial districts would be increased competition for on-street parking in neighborhoods, which could increase public sentiment for expansion of the residential permit parking program and more rigorous enforcement of parking regulations. Alternatively, if the Goals of the Downtown Plan are met, total parking demand in the year 2000 would be about 48,100 equivalent daily spaces, increases of six percent over 1984 and three percent over 1990. If the Goals were achieved, there would not be a parking deficit.

Service vehicle demand would increase to about 1,120 spaces per hour on the average; an increase of about 18% over 1984 (eight percent over 1990). The aggregate effect of the increase may be ameliorated by the provision of additional off-street loading as new construction replaces existing development. Construction worker parking demand would be expected to decrease between 1990 and 2000 as these are projected to be about 20% fewer construction workers than in 1990 on an average annual basis in the C-3 District under the Downtown Plan in the year 2000.

Pedestrian Circulation

Future conditions at the eight special study locations (see Figure IV.E.1, p. IV.E.6) were calculated on the basis of the increase in employment and land use within each Subarea between 1984 and 1990, and between 1990 and 2000 under the Downtown Plan. Although pedestrian volumes have been assumed to increase, sidewalk widths have been assumed to remain in 1981 conditions. The Downtown Plan offers Implementing Actions that would improve pedestrian circulation and safety in the C-3 District. The Actions include proposals for pedestrian arcades, through block pedestrian ways, clear zones at intersections and transit stops, and pedestrian bridges. If the Plan's proposals to improve the pedestrian network were implemented in the future, so that pedestrians would have greater effective travel areas, the future operating conditions would be better than estimated in this analysis. High-rise construction in the downtown over the last decade has shown that existing sidewalk widths tend to be maintained unless a development reconstructs an entire block face. Through-block pedestrian ways have been successfully implemented by developments that have not modified existing sidewalk widths. Because of the difficulty in predicting the precise locations of future development (see section IV.B), without which it is not possible to predict potential sidewalk widenings or alternate treatments, the analysis has not considered any change in sidewalk widths in the future. The effects of the Plan's Implementing Actions have been discussed under Mitigation (see Section V.E, p. V.E.25-V.E.28).

1990 Impacts

For the 1990 noon hour, the pedestrian analysis identified six locations of Constrained

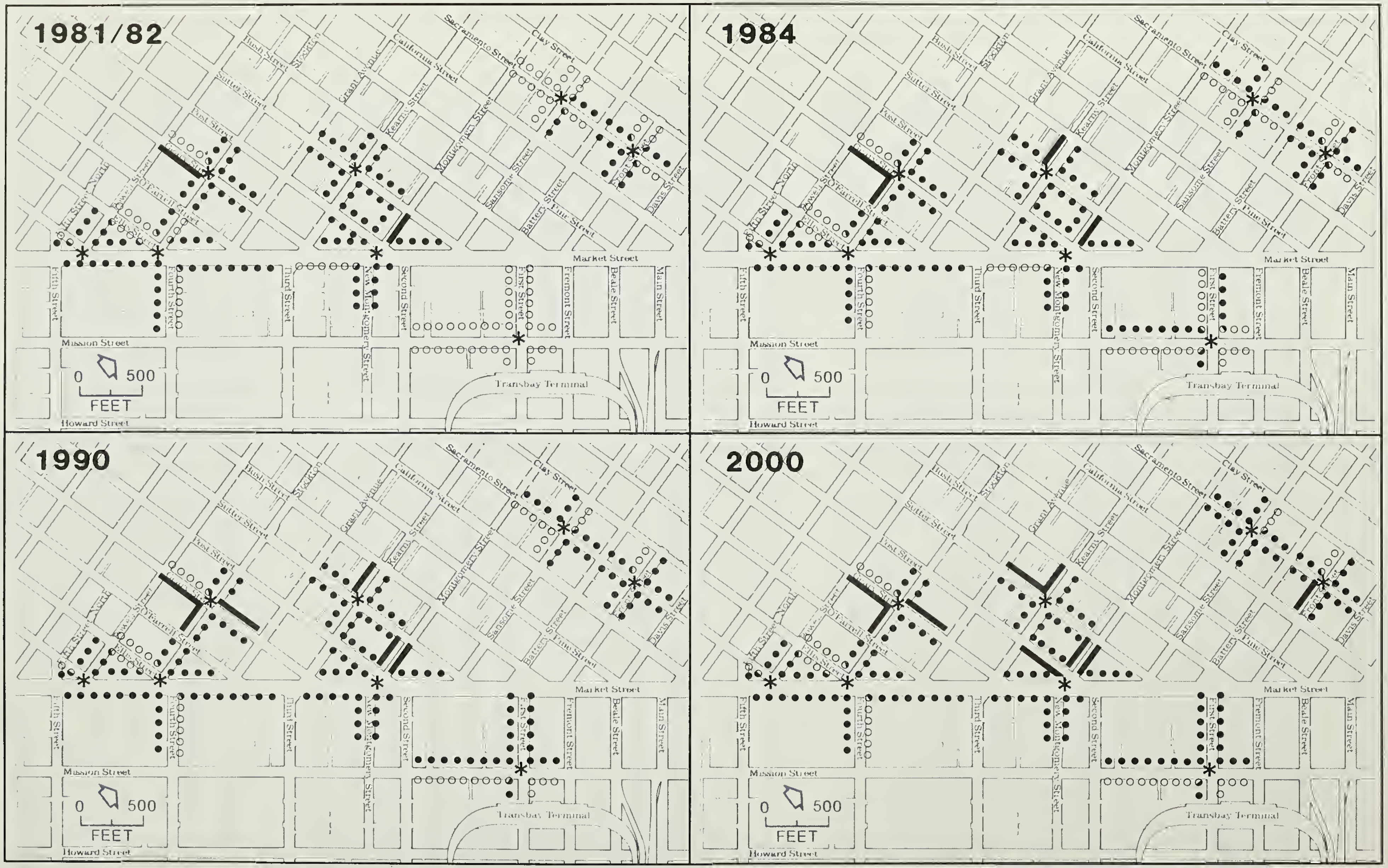
Flow (see Appendix J, Table J.7 and Figure J.3 for Flow Regimes), an increase of two locations over 1984; and 49 locations of Impeded Flow, an increase of three locations (6%) over 1984 (see Figure IV.E.4). For the p.m. peak hour, the analysis identified three areas of Constrained/Crowded Flow, an increase of two locations over 1984; and 43 areas of Impeded/Constrained Flow, an increase of three locations (eight percent) over 1984 (see Figure IV.E.5, p. IV.E.45). The total number of locations with Impeded Flows or worse would increase by 10% for the noon hour and by 12% for the p.m. peak hour between 1984 and 1990.

Pedestrian mobility would be expected to decrease in the period 1984 to 1990 as the general level of activity in the C-3 District increases. Noon conditions would worsen in areas already congested in 1981 and 1984 (lower Montgomery Street and the Union Square retail areas, for example). During the p.m. peak, pedestrian travel along commute corridors (to transit stations and parking) would be expected to operate in more congested conditions.

2000 Impacts

The existing and future pedestrian travel conditions at the eight special study locations are depicted graphically for the noon hour in Figure IV.E.4 and for the p.m. peak hour in Figure IV.E.5. For the noon hour, the number of locations with Constrained Flow would increase from six in 1990 to nine; and the number of areas with Unimpeded Flow would decrease from 12 in 1990 to 10 in the year 2000 under the Plan. The remainder of locations would have Impeded Flows, which would be an increase of four percent in the number of locations with noon-hour flows in Impeded or worse conditions. For the p.m. peak hour, the analysis identified four locations of Constrained/Crowded Flow, an increase of one location from 1990. Locations of Unimpeded/Impeded Flow would decrease from 21 in 1990 to 17 in the year 2000. Thus, the number of locations with Impeded/Constrained Flow or worse during the p.m. peak hour would increase nine percent between 1990 and 2000.

Between 1990 and 2000, increased development would continue to increase the number of C-3 District users which would lessen pedestrian mobility in the C-3 District, although the overall change would be less than during the period 1984 to 1990. The primary reason for the difference is the Plan's focus on new areas of development (i.e. in Subarea 2 rather than in Subarea 1) where pedestrian flows are lower in the existing (1981) conditions and the sidewalks can, therefore, absorb greater increases in pedestrian travel before becoming congested.



LEGEND

* SPECIAL STUDY LOCATION

○○○○○○ UNIMPEDED FLOWS

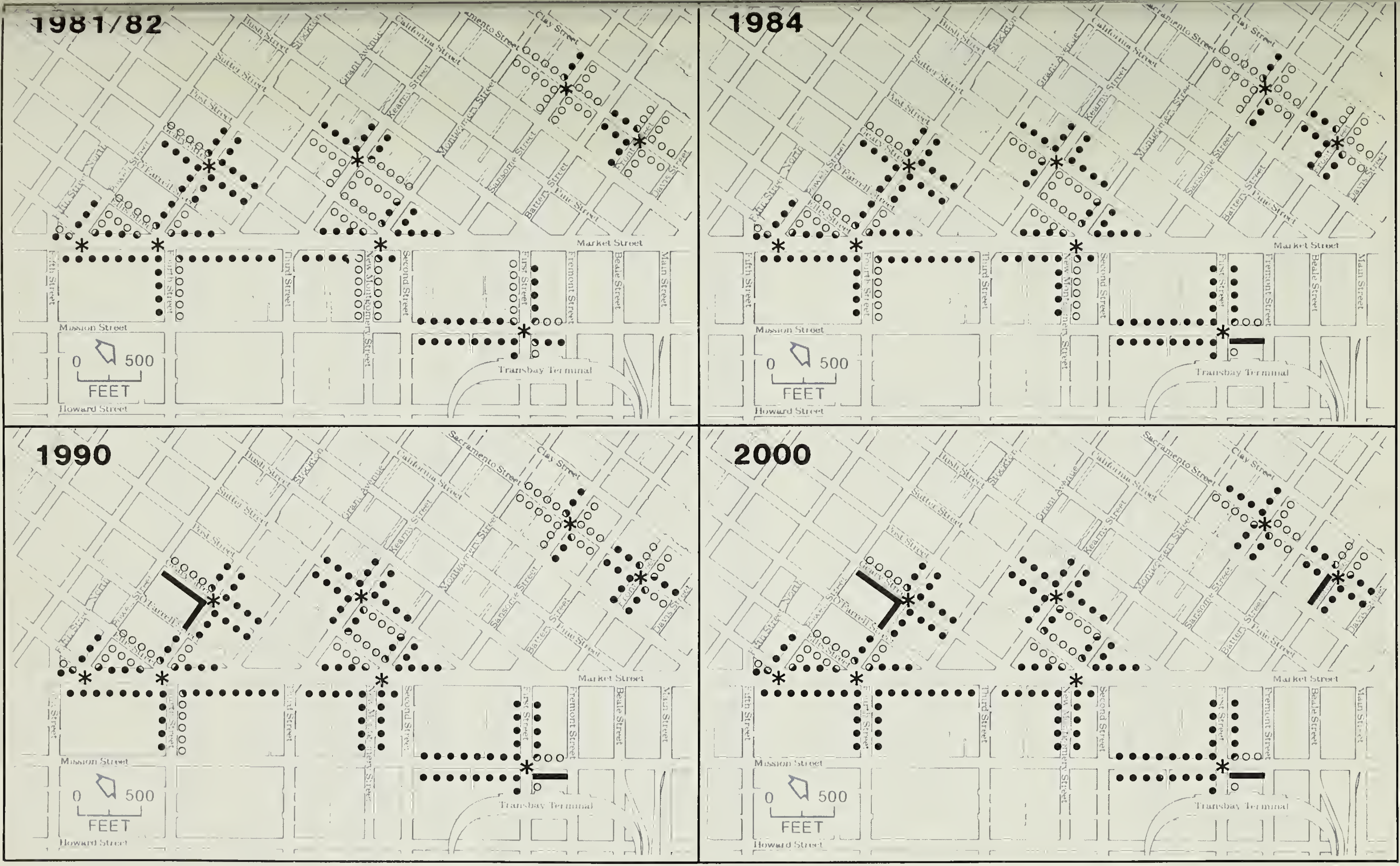
●●●●●● IMPEDED FLOWS

▬▬ CONSTRAINED FLOWS (See Appendix Table J.7 and Figure J.3 for flow descriptions)

FIGURE IV.E.4:

NOON-HOUR PEDESTRIAN FLOW CONDITIONS AT SPECIAL STUDY LOCATIONS

SOURCE: Environmental Science Associates, Inc.



LEGEND

- ✱ SPECIAL STUDY LOCATION
- ○○○○○○ UNIMPEDED FLOWS
- ●●●●●● IMPEDED FLOWS
- ▬ CONSTRAINED FLOWS (See Appendix Table J.7 and Figure J.3 for flow descriptions)

FIGURE IV.E.5:

P.M. PEAK-HOUR PEDESTRIAN FLOW CONDITIONS AT SPECIAL STUDY LOCATIONS

SOURCE: Environmental Science Associates, Inc.

NOTES - Transportation and Circulation

/1/ The Downtown Employer/Employee survey methodology is explained in Appendix F. Non-work travel data are from a survey conducted by Environmental Science Associates on June 17, 1982, on three blocks in the Embarcadero Center, and on article by Murthy Bondada, "Intra-CBD Secondary Travel Patterns of Downtown Workers," Transportation Engineering Journal of ASCE, Vol. 108 (January, 1982), pp. 15-27.

/2/ A sampling of "Phantom Commuter" articles pertaining to C-3 District transit service are on file and available for public review at the Office of Environmental Review, 450 McAllister Street, Fifth Floor.

/3/ Transportation Research Board, Interim Materials on Highway Capacity, Circular 212, January 1980, pp. 73-114. See Table J.10, Appendix J, p. J.36, for description of Level of Service for bus transit. The following chart compares the Levels of Service for bus transit and light rail transit:

	Passengers per Seat	
Level of Service	Bus Transit	Rail Transit
A	0.00 - 0.50	0.00 - 0.65
B	0.51 - 0.75	0.66 - 1.00
C	0.76 - 1.00	1.01 - 1.50
D	1.01 - 1.25	1.51 - 2.00
E	1.26 - 1.50	2.01 - 2.50

/4/ JHK and Associates, 1983 San Francisco Cordon Count, July 1983. The Cordon Count collected volume data for persons and vehicles entering and leaving the Metropolitan Traffic District (MTD). The MTD roughly corresponds to District 15 shown on Figure II.C.2 of the Downtown EIR Consultant's Report.

/5/ City staff involved in the discussions were Chi-Hsin Shao and Glen Erickson, transportation planners with the Department of City Planning, and Nelson Wong and Scott Shoaf, traffic engineers with the Department of Public Works.

/6/ San Francisco Department of City Planning, Transportation, an Element of the Master Plan, January 1983. Transit preferential streets are defined as streets on which priority is given to transit vehicles over autos during commute and business hours on weekdays.

/7/ Number of spaces obtained from C-3 Districts Parking Update, San Francisco Department of City Planning, December, 1982.

/8/ Number of spaces obtained from Parking Meter Spaces, San Francisco Department of Public Works.

/9/ Number of spaces and occupancy obtained from South-of-Market parking inventory and survey conducted by San Francisco Department of City Planning, 1982. South-of-Market area is bounded by Folsom Street, the Embarcadero, China Basin and Ninth Street.

/10/ The parking survey data and other supporting calculations and data used in the transportation impact analysis are on file and available for public review at the Office of

NOTES - Transportation and Circulation (Continued)

Environmental Review, 450 McAllister Street, Fifth Floor. The parking analysis done for this section of the EIR is more specific and detailed than the general consideration of parking as a land use in Section IV.B. Differences between these sections is attributable to the inclusion of parking outside of the C-3 District for the transportation analysis.

/11/ Wilbur Smith and Associates, Center City Pedestrian and Goods Movement Study, City and County of San Francisco, Department of City Planning, September 1981. This study was a definitive analysis of pedestrian circulation in the downtown area. Although dated, the photographs in the report illustrate operating conditions of six of the eight locations analyzed in this EIR.

/12/ Pushkarev and Zupan, Urban Space for Pedestrian, MIT Press, 1975.

/13/ The approximate match between 1990 transit demands and capacities can be explained by the fact that the Five-Year Plan process (mandated by federal statute) has allowed transit agencies to better define their future capacity needs. Each agency makes independent projections of demand upon which future improvements are based. The Five-Year Plan improvements are designed to not only provide for future demand increases, but also to improve service levels from existing conditions. The loadings shown in Table IV.E.2 for 1990 are approximately equal to the 1981/82 loadings, which means that the Five-Year Plans' projections of demand (made by each agency) are lower than the demand projected in this report.

/14/ San Francisco Municipal Railway, Short-Range Transit Plan 1983-1988, July 1983. Bay Area Rapid Transit District, Short Range Transit Plan for the Five-Year Period July 1983 Through June 1988, August 1983.

/15/ California State Department of Transportation, Operational Improvement Project on Interstate Routes 80 and 180 in Alameda and Contra Costa Counties from San Francisco-Oakland Bay Bridge to Carquinez Bridge, July 1983.

/16/ San Francisco Department of City Planning, January 1983, Transportation, An Element of the Master Plan, pp. 49-52.

/17/ San Francisco Department of City Planning, December 1982, Peripheral Parking Opportunities in the South of Market Area.

/18/ ESA/Urbitran, Access Survey of the Sutter-Stockton Garage, June 10, 1983.

/19/ City and County of San Francisco, Exhibit A, Off-Street Freight Loading and Vehicle Space Requirement and Guidelines, January 1982, City Planning Commission Resolution No. 9286. The space requirements recommended by this Resolution are based on measurements of actual demand and require more space than the City Planning Code.

F. COMMUNITY SERVICES

SETTING

Solid Waste

In 1981 San Francisco produced 688,000 tons of domestic and commercial solid waste, of which 19% were recycled./1/ Of the remaining 557,000 tons, about 73,000 tons or 13%, were collected in the C-3 District./2/ The composition of the C-3 solid waste stream varies by subarea, reflecting the dominant land uses within each. For example, the relatively homogenous Central Office area (Subarea 1) produces the greatest percentage of paper (68%), while the varied land uses of the Tenderloin (Subarea 5) produce a highly mixed waste composition./2/

Waste from the C-3 District is collected weekly on regular routes established by the Golden Gate Disposal Company under contract to the City and County of San Francisco./3/ From collection points the waste is trucked to a transfer station in Brisbane, where it is transferred to larger trucks and hauled about 55 miles to the Altamont Hills landfill in northeastern Livermore, Alameda County. The City has been using this landfill since November 1, 1983. The City's previous landfill contract with the City of Mountain View expired in October 1983.

In July 1982, after examining several potential alternate disposal sites, the City signed its current five-year contract with Alameda County to use the Altamont Hills landfill./4/ Over the five-year contract period (ending November 1, 1988) about 2.7 million tons of San Francisco solid waste will be trucked to the landfill site. The Altamont Hills landfill provides a short-term solution for disposal of San Francisco's solid wastes. In response to the recognized need for a long-term solid waste disposal solution, the City is considering several sites for a Resource Recovery Facility where recyclable components of the waste stream could be removed for sale and the remainder burned to produce electricity from steam./5,6/ In the November 1982 election Brisbane voters rejected a site on the Brisbane/San Francisco border. The City is continuing to examine potential sites for the Resource Recovery Facility./5/

The production of solid waste in the C-3 District has been projected for 1984 using information provided by Golden Gate Disposal Company./2/ In 1984 the C-3 study area will produce about 78,000 tons of waste materials, all of which will be disposed of at the Altamont Hills landfill.

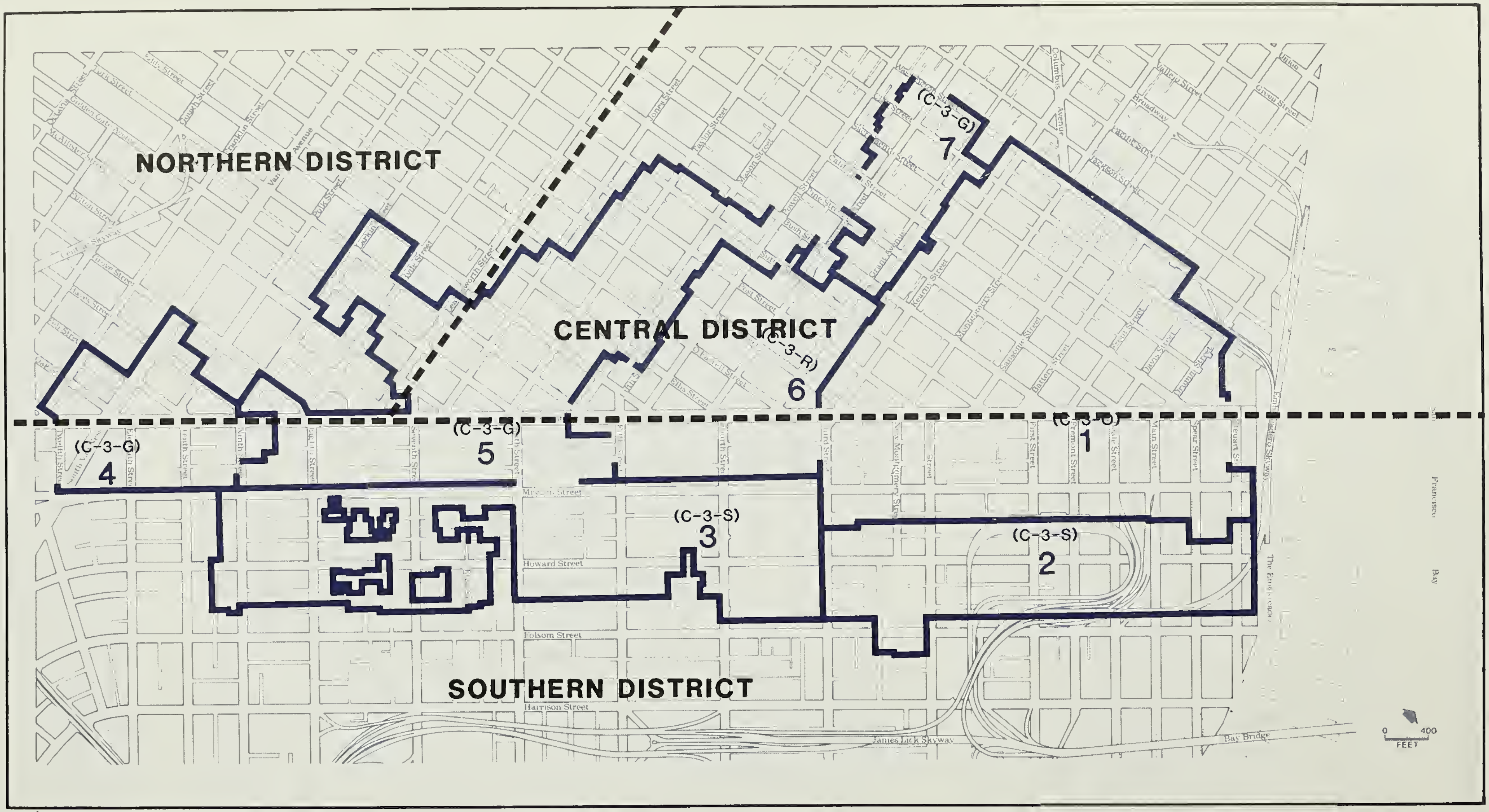
While this is an overall increase in waste generation, the relative contribution of each subarea to the total waste stream would be nearly the same as in 1981. A trend does become evident by 1984, however. Because the land use mix within the Central South of Market area (Subarea 3) begins to shift from industrial use to office use (See Section IV.B, Land Use and Real Estate Development), the composition of the waste from this area is expected to shift accordingly, producing more paper and less industrial materials than in 1981.

Police

San Francisco's C-3 District overlaps portions of three Police Department Districts: The Central District, the Southern District and the Northern District (see Figure IV.F.1). The Central District generally includes most of the downtown area north of Market Street. It is bounded by the northern waterfront from Aquatic Park to the Ferry Building, Market Street and Leavenworth Street. The Southern District generally includes the downtown area south of Market Street. It is bounded by the southern waterfront from the Ferry Building to Sixteenth Street (south of China Basins), Sixteenth Street, the Central Skyway (U.S. 101) from Sixteenth Street to Market Street and Market Street. The Northern District is north of Market Street and generally extends west from Leavenworth Street to Steiner Street.

Distribution of Police Department personnel is shown in Appendix K, Table K.2, p. K.4. The distribution shown is for the City as a whole. Staff assigned to the Central, Southern and Northern Districts are part of the Field Operations Bureau. No information is available concerning the percentages of time on duty that officers from the Central, Southern and Northern Districts spend in the C-3 District./7/ Data are also unavailable concerning the allocation of duty time by support personnel (Office of the Chief, Administration Bureau, Investigations Bureau, Support Services Bureau) to specific incidents or specific areas of the City.

Average response times (from the time a call is received to the time officers arrive at the scene) for a high-priority call in the Central, Southern and Northern Districts are 5.33 minutes, 4.66 minutes and 4.33 minutes, respectively. Response times for low-priority calls are 6.33 minutes, 6.00 minutes and 6.00 minutes, respectively./8/



▬ ▬ ▬ ▬ DISTRICT BOUNDRIES

NOTE: Study subareas and existing use districts shown in blue.

FIGURE IV.F.1:
DOWNTOWN POLICE DISTRICTS

SOURCE: San Francisco Police Department

In Fiscal Year 1981-82 (July 1 - June 30), 122,581 criminal incidents were reported citywide. Of these, 69,285 were classified as Part I and 53,296 were classified as Part II crimes. Part I incidents are those incidents for which the Police most likely to be called in, such as thefts, burglaries and assaults./9/ Part II incidents are those for which the Police are likely to initiate the response, such as narcotics, vice or disorderly conduct./9/ Many, although not all, Part II crimes are "street crimes" or "nonviolent" crimes./9/ Over the five years from 1977 to 1982, the total number of Part I crimes reported remained almost constant at about 80,000 incidents per year. Part II crimes, however, have risen steadily from 33,907 in 1977 to 53,296 in 1981-82./10/.

The Central, Southern and Northern Districts, of the City's nine Police Districts, have consistently had among the greatest numbers of crimes reported. In 1981-82 the Central District experienced 23,857 incidents or about 19% of the City's total. The Southern District had 13,461 incidents, or about 11% of the total. The Northern District had 21,557 incidents, or about 18% of the total. The three Districts are first, fourth and second, respectively, in total numbers of reported incidents in the City./11/

The crime rates and predominant types of crime for each of the C-3 District subareas are described below, based on Police Department crime statistics by "reporting area."/12/ Reporting areas vary in size, but tend to cover about nine blocks each. Because reporting area boundaries do not coincide with the subarea boundaries, the descriptions below are generalizations drawn from crime trends in all reporting areas containing a portion of the subarea discussed. Appendix K, Table K.3, p. K.6, shows ranges of criminal incidents reported in 1982 for those reporting areas overlapping each subarea.

Subarea 1, Central Office Subarea

Theft and commercial burglary are the most frequently occurring crimes in this subarea. These two categories account for about 50% of the incidents reported. The commercial burglary rate is among the highest in the City, second only to that in the Union Square area (Subarea 6). Subarea 1 falls into two Police Districts, the Central and Southern. Although the subarea's range of total incidents per reporting area is below average for the Central District (see Appendix K, p. K.6), it is typical of that for the Southern District. The subarea experiences a comparatively low crime rate for crimes other than theft and burglary.

Subarea 2, East South of Market Subarea

Theft, particularly grand theft (over $200) and auto theft, are the most frequently reported incidents in Subarea 2. Thefts comprise about 70% of the incidents reported in the subarea. Because comparatively few other incidents occur here, both the number of Part II incidents and total incidents shown in Appendix K, p. K.6, are low in comparison with the Southern District as a whole.

Subarea 3, Central South of Market Subarea

Subarea 3 cannot be characterized as a whole, because it contains a broad range of both "high-crime" and "low-crime" neighborhoods. The portions of Subarea 3 within a block-and-a-half on either side of Sixth Street have the highest crime rates in the Southern District, and among the highest in the City./13/ Part II incidents make up about 50% to 60% of the total number of incidents. However, the occurrences of theft, burglary, assault and robbery are also high. Police reporting areas farther away from Sixth Street, however, experience comparatively little crime, about one-tenth that experienced near Sixth Street./14/ Thefts and commercial burglaries were the most frequently reported incidents there.

Subarea 4, South Van Ness Subarea

Theft, auto theft, commercial burglary and non-aggravated assault are reported most frequently in Subarea 4. The portion of Subarea 4 north of Market Street and adjacent to the Civic Center is part of a Police Reporting Area which in 1982 experienced the highest rate of theft in the Northern District. This area also had the second highest number of robberies, rapes and aggravated assaults in the Northern District. Parts of Subarea 4 farther away from the Civic Center (i.e., south of Market Street and west of Van Ness Avenue) have lower crime rates; reporting areas there experienced less than half the incidents in the reporting area near the Civic Center (see Appendix K, p. K.6).

Subarea 5, Tenderloin Subarea

The Tenderloin Subarea experiences the highest crime rates of the Downtown C-3 District study area. The overwhelming majority of these incidents tend to be crimes such as non-aggravated assault, disorderly conduct, drunkeness, malicious mischief and prostitution. Part I crimes also occur frequently, however. Reporting areas overlapping

Subarea 5 have the highest incidence of homicide, rape, robbery, aggravated assault and residential burglary in the Central, Northern and Southern Districts.

Subarea 6, Union Square West Subarea

Subarea 6 experiences the highest rates of commercial burglary in the C-3 District study area, as well as in the Central, Southern and Northern Districts. It also has the highest rates of petty theft (which includes shoplifting of items worth $200 or less) and purse snatching in the three Districts. As shown in Appendix K, p. K.6, the overall crime rates for this subarea are second only to those of Subarea 5 in the C-3 District study area.

Subarea 7, Chinatown Subarea

Theft and residential burglary are the most frequently reported incidents in Subarea 7. The rates for these incidents, however, are typical of those for the Central District as a whole. The overall crime rates for this subarea are below that for the average Central District reporting area, and are comparable to those in Subareas 1 and 2.

Fire

Firefighting personnel in the San Francisco Fire Department are assigned to Stations throughout the City as members of specific task units. These task units are engine companies, truck companies, rescue squads, and specialty units (fireboat, service squad, searchlight unit, utility unit, air compressor unit, and airport companies). The City is divided into ten Battalion Districts; a Battalion Chief assigned to each Battalion District supervises all units stationed in that District. The Battalion Districts are divided into three Divisions; a Division Chief assigned to each Division supervises the Battalion Districts it contains. Non-firefighting personnel in the Fire Department are assigned to bureaus: Suppression (Bureau of Training), Prevention (Building Inspection), Investigation, Support Services (Bureau of Equipment) and Administration (Personnel Center, Communications Bureau, Management Services).

Firefighting units throughout the City are staffed uniformly. Engine companies have one officer and three firefighters on-duty, 24 hours a day; truck companies have one officer and five firefighters; rescue companies have one officer and three firefighters; divisions and battalions have a chief officer and a chief's aide. In order to maintain these staffing levels around the clock, 15 to 18 people are assigned to each engine company; 17 to 20 are assigned to each truck company; and 17 are assigned to each rescue squad. Forty-one engine companies, 18 truck companies and two rescue squads serve the City.

The type of Fire Department response varies with the type of incident. Three engine companies, two truck companies, one rescue company, one Division Chief and one Battalion Chief respond to first-alarm fires. Back-up units are called in as needed. Non-fire incidents/15/ are frequently answered by a single engine company, truck company or rescue squad. Although units are primarily responsible for responding to incidents in their immediate area, they are often called into other areas as back-up units.

Appendix K, Table K.8, p. K.11, lists the units primarily responsible for serving the C-3 District study area. Also shown are the subareas which receive first-level response from each unit, as well as the percent of its total service time and the percent of its total incidents each unit spent in the C-3 District study area in 1982. The average response time to any incident in the C-3 District study area is about three minutes.

Units throughout the rest of the City occasionally respond into the C-3 District. None of these units spent more than five percent of their annual service hours in the C-3 District in 1982. The entire firefighting division of the Fire Department (excluding the specialty units) spent 18% of its total service hours in 1982 responding to incidents in the C-3 District study area.

Table IV.F.1 shows the total number of fire and non-fire/15/ incidents in the City as a whole and in the C-3 District study area. The small increase in fire incidents in comparison with the increase in non-fire incidents projected to occur between 1982 and 1984 is due largely to the fire-resistive construction of new buildings in the Downtown area (see Appendix K, p. K.12, for fire and non-fire incidents at sample addresses, and resulting projection factors). Older buildings, typically constructed of wood and masonry, have had a greater demand for Fire Department Service than have the newer (and generally larger) steel-reinforced concrete buildings, which have replaced them in the Downtown area. In addition, all new buildings are required to be constructed in conformance with the Life Safety Provisions of the San Francisco Building Code; all new buildings over 75 feet tall are required by California Administrative Code Titles 24 and

25 to have sprinkler systems and smoke detection systems throughout. Non-fire incidents, such as first-aid calls, resuscitations and false alarms/15/, tend to rise with increases in population, and are less dependent on building construction.

TABLE IV.F.1: FIRE AND NON-FIRE INCIDENTS IN THE CITY AND C-3 DISTRICT STUDY AREA, 1982 AND 1984

	Annual Incidents		
	Fire	Non-Fire	Total
1982 City Total	6,312	29,269	35,581
1982 C-3 District	1,281	6,293	7,574
% C-3 District	20.3%	21.5%	21.2%
1984 C-3 District (projected)	1,283	6,354	7,637

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Fire Department, computer, March 23, 1983.

IMPACTS

Solid Waste

1990

In 1990, the C-3 District study area would generate about 88,000 tons of solid waste per year (compared with about 78,000 tons in 1984). The relative contribution of each subarea to the total tonnage would be nearly unchanged from 1984 (See Table IV.F.2). The shift in land use mix which is expected to begin to occur in the Central South of Market area (Subarea 3) in 1984 would continue in 1990 and a similar shift would occur in the East South of Market area (Subarea 2), with industrial space declining and office space increasing (See Section IV.B, Land Use and Real Estate Development). As a result of this shift in land use, the waste composition in these subareas would shift, resulting in more paper and less metals, wood crating and other industrial materials.

Disposal of the City's solid waste in 1990 has not yet been resolved. Immediately upon signing the five-year Altamont Hills landfill contract, the City began a search for an additional five million tons of landfill capacity for the years after 1988./16/ The Department of City Planning published a Negative Declaration concerning use of the B + J Drop Box Landfill site in Solano County after 1988./17/ The San Francisco Board of Supervisors approved use of that facility in February, 1984. The construction of a Resource Recovery Facility, currently under consideration by the City, would reduce future needs for landfill space.

2000

In the year 2000, C-3 District solid waste generation would have increased by about 8% from 1990 levels. This increase would be roughly proportional to the total increase in building area in the C-3 District over that period. Table IV.F.2 shows the projected total annual tonnage of solid waste generated by the C-3 District in the year 2000, as a result of implementation of the Downtown Plan. The contribution of each of the seven subareas, and the changes in solid waste generation between 1984 and 1990, and between 1990 and 2000, are also shown.

Subarea 1, the Central Office Subarea, would produce the most solid waste (almost 50% of the C-3 District total) of any of the subareas in 1984, 1990 and 2000. Its rate of increase of solid waste generation, however, would slow from about 2% per year between 1984 and 1990 to less than 1% per year between 1990 and 2000, as the Subarea becomes built out. Subarea 2, the East South of Market Subarea, while producing a small proportion (5% in the year 2000) of the C-3 District's solid waste, would show by far the greatest rate of growth between 1990 and 2000 (see Table IV.F.2). Subareas 5 and 6, the Tenderloin Subarea and Union Square West Subarea, respectively, would together continue to account for about 25% of the C-3 District's waste generation through the year 2000, but would experience a slowing in their rate of increase of solid waste generation (from about 3% per year between 1984 and 1990, to about less than 1% per year between 1990 and 2000). Subareas 3 (the Central South of Market Subarea), 4 (the South Van Ness Subarea) and 7 (the Chinatown Subarea) would together produce about 20% of the C-3 District's solid waste, and would experience very little change in solid waste generation between 1984 and 2000 (see Table IV.F.2).

TABLE IV.F.2: PROJECTED C-3 DISTRICT SOLID WASTE GENERATION BY SUBAREA, 1984, 1990 and 2000 UNDER THE DOWNTOWN PLAN (Tons/Year)

	1984	1990		Downtown Plan, 2000	
Subarea	Tons/Yr.(a)	Tons/Yr.(a)	% Change From 1984	Tons/Yr.(a)	% Change From 1990
1	36,670	41,380	13	44,530	8
2	3,280	3,940	20	5,190	32
3	7,560	7,950	5	8,560	8
4	3,550	3,550	0	3,790	7
5	7,970	9,340	17	10,260	10
6	11,970	14,490	21	15,180	5
7	7,250	7,460	3	7,510	1
TOTAL	78,250	88,110	13	95,020	8

(a) All numbers rounded to the nearest 10 tons.

SOURCE: Environmental Science Associates, Inc., based on information from the Golden Gate Disposal Company

Currently, only about 19% of the City's waste stream is recycled./16/ The projections shown in Table IV.F.2 assume that current recycling levels would continue through the year 2000. However, as land uses in the C-3 District continue shift away from industrial space and toward office space (particularly South of Market), the C-3 District waste stream will be made up of a greater proportion of recyclable paper. Should growth in the C-3 District take advantage of this greater opportunity to recycle solid waste (see also Section V.F, Mitigation Measures), the projected eight percent growth in solid waste generated by the C-3 District between 1990 and 2000 could be largely offset.

As indicated in the discussion of 1990 impacts, above, disposal of San Francisco's solid waste for this period has not yet been resolved. To date, landfill capacity has been secured only through October, 1988. Any landfill site used in the year 2000 may be expected to be at least as distant as the Altamont Hills site, and possibly more distant./16/ The San Francisco County Solid Waste Management Plan calls for pursuit of additional landfill capacity, as well as an emphasis upon the building of a Resource Recovery Facility. According to the Plan, such a facility would reduce the need for future landfill capacity, encourage recycling, and produce electricity which could be sold.

Police

Change in Reported Incidents

Police Department information on reported incidents in 1982 by street address was used to develop a ratio of incidents per gross square foot of building space in Downtown San Francisco. Sample addresses were selectively chosen so that a crime rate could be derived for each land use category (in both an old building and a new building, where possible) in each C-3 District subarea. Appendix K lists the sample addresses, the incidents reported for each address in 1982, and the resulting annual crime rate per gross square foot of building floor area.

These crime rates were applied to the projected land use changes by subarea for the target years, 1990 and 2000. The results are shown in Table IV.F.3. To put these changes into perspective, it should be noted that in Fiscal Year 1981-82 (July 1-June 30) 122,581 criminal incidents were reported citywide./18/ Based on data for Police Reporting Areas overlapping the C-3 District, it is estimated that roughly 23,000 incidents (or almost 20% of all City incidents) occurred in the C-3 District in 1982./19/

The projected changes in incidents shown in Table IV.F.3 are based on crime rates for existing land uses in the existing subareas, and therefore do not take into account any change in the "character" of a neighborhood. For example, should future development in Subareas 5 and 6 cause the indirect displacement of people likely to be involved in "street crime" or other Part II incidents/20/, then the actual crime rates in those areas would likely be less than those shown in Table IV.F.3./21/ Between 1984 and 1990, annual criminal incidents in the C-3 District would increase by about 730, or about 3%. Subareas 5 and 6 together would contribute about 70% of the projected change. In Subarea 5, the 1.8-million-gross-square-foot increase in tourist hotel space would be the target of most of the increases in crime. The increase would be primarily in commercial burglary and grand theft (theft of over $200 in property in 1982). In Subarea 6, although office and tourist hotel uses would experience more growth, the 249,000 gross sq. ft. increase in retail space would draw most of the new crime. Theft (or shoplifting) would be the most frequent incidents.

TABLE IV.F.3: PROJECTED CHANGES(a) IN REPORTED CRIMINAL INCIDENTS PER YEAR IN THE C-3 DISTRICT, BY SUBAREA, 1984-1990 AND 1990-2000 UNDER THE DOWNTOWN PLAN

Subarea	1984 - 1990	Downtown Plan 1990 - 2000
1	+108	+92
2	+43	+164
3	+60	+45
4	-1	+8
5	+204	+230
6	+310	+241
7	+7	+3
TOTAL	+731	+783

(a) The changes shown are not cumulative. That is, the change shown in the 1990-2000 column is only that which would occur between 1990 and 2000; it does not include the change which would occur between 1984 and 1990.

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Police Department

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Between 1990 and 2000 (after implementation of the Downtown Plan), the C-3 District would experience an increase of about 780 annual incidents. This would be an increase of about 3% over this 10-year period, less than the projected 8% increase in building area in the C-3 District over the same period. The crime rate would increase more slowly than new building area primarily because: 1) land uses which would experience the greatest increases, such as office space, have low crime rates, and would tend to replace land uses with higher crime rates (such as light industrial uses and parking); 2) newer structures would tend to have better security systems than the older structures they would replace; and 3) although the population density would increase, increasing the number of possible targets of crime, a greater population density would also tend to increase the security of an area.

Subarea 5 and 6 (the Tenderloin and Union Square Subareas, respectively) would together experience about 60% (about 30% each) of the C-3 District's new criminal incidents between 1990 and 2000. This share of new crime would be disproportionately large, as these two areas together would experience only

20% of the projected new C-3 District development over that period. In Subarea 5, new criminal incidents would be associated primarily with the new office, tourist hotel and retail space which would occur there. This development would tend to make crime trends in Subarea 5 more like those which currently exist in Subarea 6. The proportion of Part II crimes/20/ (such as narcotics, vice, drunkeness or disorderly conduct) would tend to go down, as the proportion of Part I crimes/20/, particularly theft, burglary and purse snatchings, were up.

In Subarea 6, new criminal incidents would be associated primarily with the new retail space which would occur there. These incidents would consist primarily of thefts and burglaries, thus continuing existing crime trends in the area.

Subareas 3, 4, and 7 would experience comparatively little increase in crime between 1990 and 2000. In Subareas 3 and 4 (the Central South of Market Subarea and the South Van Ness Subarea), this is because the land uses which would be displaced, particularly industry, warehousing and parking, have much higher crime rates associated with them than do the uses which would replace them (primarily office uses). Subarea 7 would experience only small increases in criminal incidents (see Table IV.F.3), because little new construction is projected to occur there.

Although Subareas 1 and 2 are projected to contain about 70% of the C-3 District growth between 1990 and 2000 after implementation of the Downtown Plan, these subareas would be responsible for only 23% of the projected increase in C-3 District criminal incidents. This is because new office space, which would constitute the bulk of the growth in these two subareas, typically experiences lower crime rates (incidents per gross square foot) than do other uses (see Appendix K).

Effects on Police Department Service

Table IV.F.4 shows projected changes in demand for Police Department personnel, based on existing ratios between incidents and personnel (see Appendix K)./22/

The Police Department reported a total strength of 2,583 persons in its 1981-82 Annual Report./18/ The increase in demand for Police Department personnel (for 13 persons between 1990 and 2000) would represent less than a one percent increase in the

TABLE IV.F.4: PROJECTED CHANGES IN DEMAND FOR POLICE DEPARTMENT PERSONNEL IN THE C-3 DISTRICT, 1984-1990 AND 1990-2000 UNDER THE DOWNTOWN PLAN

Category (a)	1984 - 1990	Downtown Plan 1990 - 2000
Field Operations	+7	+8
Investigations	+1	+1
Traffic	+1	0
Support	+4	+4
TOTAL	+13	+13

(a) The categories listed contain the following Police Department Bureaus:

Field Operations:	Field Operations Bureau excluding the Traffic Division
Investigation:	Investigation Bureau
Traffic:	Traffic Division of the Field Operations Bureau
Support:	Support Services Bureau, 85 % of the Department's civilian jobs (these jobs may be filled by sworn personnel; see Note /22/

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Police Department (see Appendix K).

Department's total strength (and even less should it grow in response to demands from the C-3 District and the rest of the City before 1990).

Table IV.F.5 shows the resulting projected effects on the Police Department's operating budget should the projected personnel demands be met. It was assumed that all costs were proportional to labor costs (see Appendix K). The Police Department's operating budget for Fiscal Year 1981-82 was $126,307,436. Similar to personnel changes discussed above, the increase shown in Table IV.F.5 would add no more than one percent in constant 1982 dollars to the Police Department budget. The Police Department currently has no plans for any future major capital expenditures (such as a new Police Station), nor would any be needed to meet the demands identified in Table IV.F.4./23/

TABLE IV.F.5: PROJECTED CHANGES IN POLICE DEPARTMENT BUDGETS NECESSARY TO SERVE THE C-3 DISTRICT, 1984-1990 and 1990-2000 UNDER THE DOWNTOWN PLAN

	Change in Department Annual Budget (1982 Dollars)	
Budget Category (a)	1984 - 1990	Downtown Plan 1990 - 2000
Labor	591,500	591,500
Expenses	31,200	31,200
Equipment	9,100	9,100
Programs	3,800	3,800
TOTAL	635,600	635,600

(a) The categories listed contain the following Police Department Budget categories (see Appendix K):

Labor:	total Labor Costs, including Police Salaries, Civilian Salaries and Fringe Benefits
Expenses:	Contractual Services, Current Expenses, Services of other Departments
Programs:	Special Programs, including Crime Prevention and Education, the Senior Escort Program and Community Relations Programs

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Police Department

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FIRE

Change in Fire and Non-Fire Incidents

In order to project changes in fire and non-fire/15/ incidents, incident rates for specific uses were developed based on Fire Department records for sample C-3 District addresses (see Appendix K). These incident rates were applied to the projected land use changes by Alternative for the two target years, 1990 and 2000. The results are shown in Table IV.F.6./24/

Table IV.F.6 shows that non-fire incidents would continue to increase more rapidly than fire incidents (see Setting Section). This is because non-fire incidents, such as first-aid calls, resuscitations and false alarms/15/ tend to increase in proportion with population increases, whereas fire incidents are more dependent on building construction. The annual number of fire incidents would increase by less than one percent between 1984 and 2000. Because of the effectiveness of the San Francisco and State Life Safety Code provisions described in the Setting section, above, fire incidents might actually decrease in some areas where older, small-scale buildings are replaced with new, fire-resistant larger-scale buildings.

Because 88% of the projected new building area between 1990 and 2000 in the C-3 District would be office space, a high proportion of new incidents would occur in office buildings. Sixty percent of the new fire incidents and 85% of the new non-fire incidents in this period would occur in office buildings./25/ The remaining new incidents would occur primarily in residential uses (such as housing and tourist hotels).

Effects on Fire Department Service

Based on existing data, average service hours required for C-3 District fire incidents and non-fire incidents were derived for each task unit (Division Chiefs, Battalion Chiefs, Engine Companies, Truck Companies and Rescue Squads) responding to these incidents (see Appendix K). These service-hour factors take the following into account: 1) that different types of units spend differing amounts of time at incidents, 2) that non-fire incidents generally require less service time per incident than do fire incidents; and

TABLE IV.F.6: PROJECTED ANNUAL FIRE AND NON-FIRE INCIDENTS IN THE C-3 DISTRICT, 1990 AND 2000 UNDER THE DOWNTOWN PLAN

	Total Annual Incidents		Percent Change	
	1990	2000	1984-1990	1990-2000
Fire	1,290	1,295	+0.5%	+0.4%
Non-Fire	6,445	6,527	+1.4%	+1.3%
TOTAL	7,735	7,822	+1.3%	+1.1%

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Fire Department (see Appendix K).

3) that some incidents are responded to by several units at a time while others receive the response of only one unit. Table IV.F.7 shows the resulting projected changes in annual service-hours for each type of task unit responding to the incidents shown in Table IV.F.6. Table IV.F.7 also shows the effects of adding all of the projected new service-hour demands to those units which currently spend the most time serving the C-3 District. This is a worst-case assumption, since it is likely that the new service-hour demands would be spread among all units responding to calls in the C-3 District (see Appendix K).

Table IV.F.7 indicates that all of the units which spend the most time in the C-3 District already work more annual service hours than do the average City units. Engine Company 1 puts in almost twice as many service hours annually as does the City's average engine company. Under the worst-case assumption that all new demands for engine company time in the C-3 District would be met by Engine Co. 1 alone, this unit would also experience the largest increase in service hours of the units shown in Table IV.F.7. According to the Fire Department/26/, 675 annual service hours is the threshold for new service; at this level an engine company would be unable to adequately serve its area. Therefore, at about 568 annual service hours in the year 2000, Engine Company 1 would be working at about 85% of its maximum capacity. It would continue to be one of the busiest units in the City, but no new service would be required. The other units shown in Table IV.F.7 would also continue to work more service hours than would the City's average units (particularly Rescue Co. 1 and Truck Co. 1), but none of these units would approach or exceed their annual service hour limits./26/,/27/

As units serving the Downtown spend more time responding to C-3 District calls, units in outlying areas could spend more time acting as back-up units for C-3 District calls. Because the projected service-hour increases shown in Table IV.F.7 are small (i.e., by less than nine percent between 1984 and 2000), and because units in outlying areas are currently well below their service-hour maximums, the effect on response time to outlying areas is likely to be negligeable./28/

Although the nature of calls for service to the C-3 District would continue to shift away from fire incidents and toward non-fire incidents, the Fire Department has indicated that no new equipment or specialized staff would be needed./29/

The projected growth in building space between 1984 and 2000 would require Fire Department to hire additional building inspectors, in order to maintain annual inspections

TABLE IV.F.7: PROJECTED ANNUAL FIRE DEPARTMENT SERVICE-HOUR DEMANDS IN THE C-3 DISTRICT, 1984-1990 AND 1990-2000 UNDER THE DOWNTOWN PLAN

Task Unit Category	Existing Average Service Hours/Year (a)	Increase in C-3 District Service-Hour Demands (b)	
		1984 - 1990	Downtown Plan 1990 - 2000
Division	231	2	1
Battalion	250	4	4
Engine Co.	289	13	12
Truck Co.	260	7	6
Rescue Co.	370	4	3

Units Nearest to C-3 District	Total Service Hours (b), By Unit, If All New C-3 District Demands Met By Nearest Units		
	1984	1990	Downtown Plan 2000
Division 1	281	283	284
Battalion 3	295	299	302
Engine Co. 1	544	557	568
Truck Co. 1	427	434	441
Rescue Co. 1	502	506	509

(a) 1982 average for all units in the City in each category.

(b) Rounded to the nearest hour. Note that because of this, totals do not add up exactly.

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Fire Department (see Appendix K).

of all Downtown high-rises. The Department currently has 32 inspectors./30/ To service projected new development between 1984 and 1990, the Department would need two more inspectors./31/ Between 1990 and 2000, after implementation of the Downtown Plan, no additional inspectors would be necessary; the new workload could be accomodated by the 34 inspectors./31/ The cost to the Department of the two additional inspectors would be about $119,000 per year (1982 dollars). The Fire Department has indicated that no new equipment or administrative personnel would be required to support the additional inspectors./29/

The Auxiliary Water Supply System, commonly termed the high-pressure system, is used exclusively for firefighting purposes and augments the domestic water supply as an additional means of ensuring water availability in the event of a fire. The high-pressure system is distributed throughout the C-3 District study area, and would not be adversely affected by projected development under the Downtown Plan./29/

NOTES - Community Services

/1/ According to the San Francisco County Solid Waste Management Plan Final Draft of September 8, 1982 (hereinafter, Solid Waste Plan), page 95, the City and County of San Francisco produced about one million tons of solid waste in 1981. About 200,000 tons were construction/demolition debris delivered to locations other than the Transfer Station, 1,700 tons were hazardous wastes and 60,000 tons were sewage residues. The balance, 688,000 tons, was disposed of either by recycling (131,000 tons) or by landfill (557,000 tons).

/2/ M. Conte, President, Golden Gate Disposal Company, correspondence of January 21, 1983. This letter is available for review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street, San Francisco.

/3/ Solid Waste Plan, p. 31.

/4/ Solid Waste Plan, p. 12.

/5/ Solid Waste Plan, pp. 84-90.

/6/ Final Environmental Impact Report for Resource Conversion Center (State Clearinghouse No. SCH 79051401), prepared for the City of Brisbane, California, June 1980; Final Environmental Impact Report for the San Francisco Resource Recovery Facility, prepared for the City of Brisbane, California, June, 1982.

/7/ The Police Department is installing a computer dispatch system, planned to be operational in August 1983, which would track how much officer time is spent responding to incidents within specific radio car sectors as well as at specific addresses. Until the computer is operational, the Department has no systematic way of tracking officer time by area or by incident. Captain Kevin J. Mullen, Commanding Officer, Staff Inspection Division, personal interview, December 23, 1982.

/8/ Based on a sample of calls monitored by San Francisco Police Department Communication Room Personnel over one month (February, 1983).

/9/ Part I incidents: homicide, forcible rape, strong-arm robbery, armed robbery, aggravated assault, burglary, grand theft (over $200), petty theft, auto theft, purse snatching.

Part II incidents: non-aggravated assault, arson, forgery and counterfeiting, fraud and embezzlement, receiving stolen property, carrying weapons, sex offenses (except rape), narcotics, gambling, offenses against family and child, malicious mischief, violation of liquor laws, disorderly conduct, drunkeness, drunk driving, traffic violations, other miscellaneous crimes.

NOTES - Community Services (Continued)

/10/ Based on statistics contained in San Francisco Police Department, Annual Report, 1981-82, September 3, 1982.

/11/ The Mission District holds third place with 17,693 reported incidents in 1981-82.

/12/ San Francisco Police Department, "Incidents for which a Police Report Was Made by District, Plot and Crime, January to December, 1982."

/13/ The two reporting areas on either side of Sixth Street experienced about 2,500 incidents and 3,300 incidents, respectively, in 1982. These are about five times the average for the Southern District.

/14/ Reporting areas including Subarea 3 near Third Street and near Ninth Street each experienced about 300 incidents in 1982.

/15/ Non-fire incidents include: false alarms; rescue calls (resuscitation, first aid, person(s) trapped in elevators or autos, landslides, aircraft incidents and drownings); overpressure calls (steam pipe ruptures, gas pipe ruptures, water heater ruptures); hazard calls (gas/oil spillage, explosives removal, downed power lines, electric short circuits, natural gas leaks, building collapses); service calls (lock out/lock in, water removal, animal rescue, assist police, broken hydrants, sinking boats, broken sprinklers); and other miscellaneous incidents.

/16/ Solid Waste Plan, pp. 177-179; 64-65.

/17/ Department of City Planning, File 83.437E, Transportation of City Solid Waste to Landfill, 1988-93, finalized December 1983.

/18/ San Francisco Police Department, September 3, 1982, Annual Report, 1981-82.

/19/ This estimate is correct only to about the nearest 1,000 incidents, because Reporting Area boundaries and C-3 District boundaries do not coincide.

/20/ Part I crimes include: homicide, forcible rape, strong-arm robbery, armed robbery, aggravated assault, burglary, grand theft (over $200), petty theft, auto theft, purse snatching.

Part II crimes include: non-aggravated assault, arson, forgery and counterfeiting, fraud and embezzlement, receiving stolen property, carrying weapons, sex offenses (except rape), narcotics, gambling, offenses against family and child, malicious mischief, violation of liquor laws, disorderly conduct, drunkeness, drunk driving, traffic violations, other miscellaneous crimes.

/21/ This effect was counterbalanced to some extent by applying the crime rates of new buildings to growing land uses, and the crime rates of old buildings to declining land uses, wherever possible. Thus, it was assumed that any new buildings in the future would have security systems similar to those in today's new buildings, and that buildings to be demolished would have crime rates similar to those of today's old buildings.

/22/ In order to help attain and maintain the number of sworn officers required by the 1979 Federal Consent Decree (see Appendix K), the Department is currently (1983) filling some of the opening civilian positions with sworn personnel. This policy is likely to

NOTES - Community Services (Continued)

continue into the future. Therefore, although the number of "civilian positions" in the Department could increase in the future, the actual number of civilian employees could remain constant or go down, as they are replaced by sworn personnel. Sergeant James Farrell, Planning and Research Division, San Francisco Police Department, telephone conversation, April 27, 1983.

/23/ Michael F. Lennon, Jr., Captain of Police, Commanding Officer, Planning and Research Division, San Francisco Police Departments, personal interview, March 29, 1983.

/24/ Projected changes in annual incidents were not broken out by subarea for two reasons: 1) it was found that incident rates were much more dependent on building type, use and floor area than on building location; and 2) projected changes in annual incidents for some subareas were so small as to be within the estimated margin of error for analysis.

/25/ Because office space has comparatively low incident rates, its share of the new incidents would be less than its share of the new building space.

/26/ Robert Rose, Deputy Chief, Support Services, San Francisco Fire Department, telephone conversation, April 12, 1983. This service threshold confirms that identified in the Gruen Gruen + Associates, 1981, Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco.

/27/ It should be noted here that this analysis does not consider the effects of any growth outside of the C-3 District. Many of the units which serve the C-3 District also serve portions of the South-of-Market area, south of Folsom Street. Future growth in this area, combined with that projected for the C-3 District, could require new service (most likely an Engine Company) as C-3 District units become more busy.

/28/ According to Robert Rose, Deputy Chief, Support Services, San Francisco Fire Department, memorandum dated March 25, 1983, "Service to outlying of adjacent areas would not be impaired as a result of development of any of the five alternatives." The service demands of the Downtown Plan would be within that of the Alternatives (see Section VII.F. Alternatives).

/29/ Robert Rose, Deputy Chief, Support Services, San Francisco Fire Department, memorandum dated March 25, 1983.

/30/ In fiscal year 1981-82, based on San Francisco Fire Department, July 24, 1982, 1981-82 Annual Report. No additional inspectors would be needed between 1981 and 1984.

/31/ These calculations are based on Gruen Gruen + Associates, March 1981, Fiscal Impacts of New Downtown High-Rises, which found that each inspector serviced an average of about 16 million sq. ft. of building space. They also assumed that, to reasonably maintain current service levels, the first additional inspector would be hired when an additonal 50% of the average amount of space assigned per inspector was constructed, and each inspector thereafter hired when additional space was constructed which exceeded the average workload by 10%.

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